TABLE OF CONTENTS

- ➢ **Aadi Mahotsav**

- Aadi Mahotsav, a National Tribal Festival, is being organized in New Delhi by the Ministry of Tribal Affairs and TRIFED to celebrate, cherish and promote the spirit of tribal craft, culture, cuisine and commerce.

- *Theme of The Festival:* "A Celebration of the Spirit of Tribal Culture, Craft, Cuisine and Commerce".

- The Mahotsav will comprise of display and sale of items of tribal art and craft, tribal medicine & healers, tribal cuisine and display of tribal folk performance, in which tribal artisans, chefs, folk dancers/musicians from 23 States of the country shall participate and provide glimpse of their rich traditional culture.

- ➢ **International Buddhist Conclave 2018**

- The **International Buddhist Conclave (IBC) 2018** held in India saw participation from **29 countries** having significant Buddhist population. Japan was the partner country.

- The 4 days Conclave was held at New Delhi and Ajanta (Maharashtra), followed by site visits to Rajgir, Nalanda and Bodhgaya (Bihar) and Sarnath (UP).

- The **biennial Conclave** was organized by the **Ministry of Tourism** in collaboration with the State Governments of Maharashtra, Bihar and Uttar Pradesh.

- The theme of the conclave was **"Buddha Path – The Living Heritage.**

- The aim of the Conclave was to **boost tourism** to the Buddhist sites in the country and **cultivate friendly ties** with countries and communities interested in Buddhism.

- ➢ **INTACH (Indian National Trust for Art and Cultural Heritage)**

- **INTACH** has called for transforming heritage buildings in Rajasthan into "economic assets" for the society. Economic benefits could be derived from these properties as an alternative to paying for their upkeep on a regular basis

- It has launched an exercise for mapping of natural heritage in Thar desert with the participation of local communities for modern planning

> **INTACH** is a **non-profit charitable organization** working for conserving the cultural heritage of India. In 1984, INTACH was established as a Registered Society under the **Societies' Registration Act, 1860.** It is **Headquartered in New Delhi .In 2007, UNESCO granted INTACH a 'special consultative status'.**

- ➢ **11th World Hindi Conference**

- The **11th World Hindi Conference** was held in **Port Louis** (capital of Mauritius) *with the theme "Hindi World and Indian Culture (Hindi Vishwa Aur Bharatiya Sanskriti)".*

- The **1st World Hindi Conference** was held in 1975 in **Nagpur,** with a pledge to develop, enhance and conserve Hindi language in its original form. To commemorate this event, every year 10th January is being observed as **World Hindi Day.**

- MEA has also established a **World Hindi Secretariat in Mauritius** for working towards recognition of Hindi at the United Nations as an Official Language.

➤ **Project Navlekha**

- **At the fourth 'Google for India' event,** Google unveiled **Project Navlekha** to bring **India's 135,000 Indic language publications online in a hassle-free manner**.

- **Navlekha, which means** '**a new way to write**' in Sanskrit, will allow local publishers who do not have websites (around 90%) to make their offline content fit for online publishing in less than a minute

- **It comprises a tool that uses Artificial Intelligence (AI) to render any PDF containing Indian language content into editable text**, making it easy for print publishers to create mobile-friendly web content.

➤ **Seva Bhoj Yojana**

- **The Ministry of Culture** has launched a new scheme namely **Seva Bhoj Yojana**

- The scheme envisages **to reimburse the Central Government share of CGST and IGST on Food/Prasad/Langar** offered by Religious/Charitable Institutions **to reduce the financial burden of such charitable or religious institutions** who provide food free of cost without any discrimination to public/ devotees.

- **The GST is not levied on food served**, but is charged on the purchase of raw material used to prepare the food

- The scheme applies to only those charitable or religious institutions — temple, gurdwara, mosque, church, dharmik ashram, dargah, and monasteries — that have been **in existence for at least 3 years** before applying for grant, and who **serve free food to at least 5,000 people a month**..

➤ **Tagore Award for Cultural Harmony**

- The **Tagore Award for Cultural Harmony for the years 2014, 2015, & 2016** was recently conferred on the doyen of Manipuri dance **Rajkumar Singhajit Singh**; **Chhayanaut** (a cultural organization of Bangladesh); and on one of India's greatest sculptors, *Ram Vanji Sutar*, respectively.

- The annual award was instituted by the government during the commemoration of **150th Birth Anniversary of Gurudev Rabindranath Tagore.** The award is **open to all persons regardless of nationality**, race, language, caste, creed or sex.

- The **first Tagore Award was conferred on Pt. Ravi Shankar**, the Indian Sitar Maestro in 2012 and second was conferred on Shri Zubin Mehta in 2013**.**

- **Ram Vanji Sutar** also **designed the Statue of Unity** which it is the **world's tallest statue at the height of 182 metres**

➤ **The coastal districts of Dakshina Kannada and Udupi are all set for the kambala**

- **Kambala in its traditional form is non-competitive with buffalo pairs made to race one after another in paddy fields**, which is considered a thanksgiving to the Gods for protecting the animals from diseases.

- Over the years, it has however become an organised sport with animal rights activists claiming that the buffaloes run in the race due to fear of being beaten.

- Karnataka government had promulgated **Prevention of Cruelty to Animals (Karnataka Amendment)**Ordinance, 2017 on July 20 last year. The President gave his assent to the Prevention of Cruelty to Animals (Karnataka Amendment) Bill making Kambala a legal rural sport in Karnataka. **The Bill seeks to exempt kambala and bullock-cart racing from the ambit of the Prevention of Cruelty to Animals (PCA) Act, 1960.**

➢ **Sangai Tourism Festival**

- **Every year the State of Manipur** celebrates the **"Manipur Sangai Festival"** from **21st to 30th November.**

- **Sangai Festival is an annual cultural extravaganza in Manipur. The festival is labelled as the grandest festival of the State today and helps promote Manipur as a world class tourism destination.**

- The 'Festival' is named after **the State animal, Sangai, the brow-antlered deer found only in Manipur**. It started in the year 2010 and has grown over the years into a big platform for Manipur to showcase its rich tradition and culture to the world.

- The State's **classical dance** form, **'Ras Leela'** is quite famous all over the world for its distinctiveness from any other dance forms in India. **The Ras Leela will form an important part of the dance performances at the Manipur Sangai** Festival besides the various other folk dance performances like the Kabui Naga dance, Bamboo dance, Maibi dance, Lai Haraoba dance, Khamba Thoibi dance etc. which will be showcased at the festival.

➢ **UNESCO's List of Intangible Cultural Heritage**

- UNESCO, the United Nations Educational, Scientific and Cultural Organization, has added **Reggae to its list of cultural institutions worthy of protection and preservation**.

- **Reggae** is **Jamaican music originating from marginalized groups**, mainly in Western Kingston. It started out as voice of marginalized. But now it is played and embraced by wide cross-section of society, including various genders, ethnic and religious groups.

List From India

1.Tradition of Vedic chanting, 2.Ramlila, the traditional performance of the Ramayana, 3. Kutiyattam: Sanskrit theatre, 4. Ramman, religious festival and ritual theatre of the Garhwal Himalayas 5. Mudiyettu, ritual theatre and dance drama of Kerala , 6.Kalbelia folk songs and dances of Rajasthan,
7.Chhau dance, 8. Buddhist chanting of Ladakh: recitation of sacred Buddhist texts in the trans-Himalayan Ladakh region, Jammu and Kashmir,9. Sankirtana, ritual singing, drumming and dancing of Manipur,10. Traditional brass and copper craft of utensil making among the Thatheras , Punjab 11. Yoga 12. Nawrouz 13. Kumbh Mela

---

➢ The world's earliest-known **cave painting of an animal** has been discovered in **Indonesia (Borneo).** It dates back to at least **40,000 years ago**.

EDUCATION

➢ **Replacing UGC with a New Higher Education Regulator**

• Government has announced that it will dissolve the **University Grants Commission (UGC)** and replace it with a new **Higher Education Commission of India (HECI).**

THE CHANGES	
UGC ACT	**HECI ACT**
■ UGC will have chairman, vice-chairman, secretary, 10 other members	■ HECI will have chairman, vice-chairman, secretary, 12 other members
■ No provision for govt to remove chairman, vice-chairman, members	■ Govt can remove chairman, vice-chairman, members for nine reasons
■ UGC to disburse grants to universities	■ HECI not responsible for disbursing grants to universities; this function will be discharged by HRD Ministry
■ Can withhold grants of an institution that doesn't comply with its directions and standards	■ Can revoke approval of an institution for not complying with its standards
■ Retirement age of chairman, vice-chairman fixed at 65 yrs	■ Retirement age of chairman, vice-chairman fixed at 70 yrs
■ Chairman, vice-chairman, members can accept job offers from higher education institutions run by Centre, state, private bodies	■ Two-year cooling-off period for chairman, vice-chairman, members
■ No provision for online application	■ Only online applications for HECI's approval
■ No provision for an advisory council	■ Will have an advisory council chaired by HRD Minister

• HECI will be the new apex regulator for university and higher education. It will set benchmarks for academic performance, ensure that institutions adhere to these, and act against those that violate standards.

• **The UGC was set up in 1953 and became a statutory body through an Act of Parliament in 1956**. The UGC seeks to promote responsible understanding between the institutions, the Government, and the community at large

➢ **Higher Education Financing Agency**

• CCEA has approved increasing the authorized share capital of HEFA to Rs. 10,000 crore from the current sum of Rs. 2000 crore and approved infusing additional government equity of Rs. 5,000 crore.

• HEFA has been set up on May 31, 2017 by the Central Government as a **Non Profit, Non Banking Financing Company (NBFC)** for mobilising *extra-budgetary resources* for building crucial infrastructure in the higher educational institutions under Central Govt. It is the beginning of a new initiative to address the growing demand of finance for the higher education sector.

• HEFA will provide an **alternative source of funding** to institutions to meet their financial requirements. It will also push institutions to become financially self-sustaining and not depend on the government for all their growth requirements. This would enable addressing the needs of all educational institutions with differing financial capacity in an inclusive manner.

➢ **All India Survey on Higher Education Report (AISHE) 2017-18**

• **The report is based on voluntary uploading of data by institutions of Higher Education listed in aishe.gov.in portal** in specially designed formats of data collection

• The top 8 States in terms of highest number of colleges in India are Uttar Pradesh, Maharashtra, Karnataka, Rajasthan, Andhra Pradesh, Tamil Nadu, Gujarat and Madhya Pradesh.

• **College density** i.e. the number of colleges per lakh eligible population (population in the age-group 18-23 years) varies from 7 in Bihar to 51 in Karnataka and Telangana as compared to **all India average of 28.**

• **Gross Enrolment Ratio (GER)** in Higher education in India is **25.8%**, which is calculated for 18-23 years of age group. GER for male population is 26.3% and for females, it is 25.4.

• Maximum numbers of students are enrolled in B.A. programme followed by B.Sc. and B.Com. programmes.

- As far as the PG courses are concerned, maximum students enrolled in social sciences followed by management stream

➢ **Missed Opportunities: The High Cost of Not Educating Girls**

- In this report, the **World Bank** has claimed that failure to educate girls could cost the world as much as US $30 trillion globally in lost earnings and productivity.

- The 2011 census highlights a large gender gap on the literacy front. It shows that male literacy rate is 82.14% while the **rate for females lags behind at 65.46%.**

➢ **Right of Children to Free and Compulsory Education (2nd Amendment) Bill, 2017**

- The original RTE Act stipulated that **no child admitted in a school shall be held back in any class or expelled from school** till the completion of elementary education. Also referred to as **No Detention Policy.**

- The Bill provides for **regular examination in classes V and VIII**, and if a child fails, there is a provision to give her or him additional opportunity to take a re-examination within two months

- As per the amendment, it would be **left to states to decide whether to continue the no-detention policy**.

➢ **Revitalising Infrastructure and Systems In Education (RISE) Scheme**

- In order to s**tep up investments in general and research infrastructure in premier educational institutions**, including **health institutions**, the govt has launched a major initiative named RISE.

- The scheme aims to lend low-cost funds to government higher educational institutions. Under it, all centrally-funded institutes (CFIs), including central universities, IITs, IIMs, NITs and IISERs can borrow from a Rs 1,00,000 crore corpus over next 4 years to expand and build new infrastructure.

- It will be financed through suitably structured Higher Education Financing Agency (HEFA).

➢ **Aspirational Districts** - **Rashtriya Uchchatar Shiksha Abhiyan (RUSA)**

- NITI Aayog has identified 117 districts as **Aspirational Districts**. These districts have been selected on the basis of **composite index** which includes published data of deprivation enumerated under Socio-Economic Caste Census, health & nutrition, education and basic infrastructure.

- An Expert Committee, constituted by the University Grants Commission (UGC), had identified 374 Educationally Backward Districts (EBDs) where Gross Enrolment Ratio (GER) in higher education was less than the national average of 25.2%, based on All India Higher Education Survey (AIHES) released by the HRD Ministry.

- During the second phase of the Centrally Sponsored Scheme of Rashtriya Uchchatar Shiksha Abhiyan (RUSA), central assistance is provided for opening of **new Model Degree Colleges (MDCs) in Aspirational Districts** and in unserved & underserved districts in North Eastern and Himalayan States.

Rashtriya Uchchatar Shiksha Abhiyan (RUSA)
- RUSA's aim is to **improve access, equity and quality** in higher education through planned development of higher education at the state level.
- Its objectives include creating new academic institutions, expanding and upgrading the existing ones,

---

developing institutions that are self-reliant in terms of quality education, professionally managed and characterized by greater inclination towards research and provide students with education that is relevant to them as well as the nation as a whole

➢ **Atal Ranking of Institutions on Innovation Achievements (ARIIA)**

- The HRD Ministry announced the Atal Ranking of Institutions on Innovation Achievements (ARIIA) to rank education institutions on innovation related indicators. It is an annual ranking of higher educational institutions based on **how they fare in terms of innovation.**

- **ARIIA**, which *focuses on innovation*, will work parallel to the ranking of institutions captured by the annual **National Institutional Ranking Framework (NIRF)** which *focuses on research*.

- The new ranking will be formally launched on 15 Oct, the birth anniversary of former President APJ Abdul Kalam. The first results will be declared on February 28, 2019, which is also Science Day.

➢ **Program for International Student Assessment (PISA)**

- Union HRD Ministry has decided to participate in PISA– an international assessment of student ability – in 2021 after a gap of 10 years. Till date, India has participated only once in PISA in 2009.

- Coordinated by the *Organization for Economic Cooperation and Development (OECD)*, it is a triennial international survey which was first administered in 2000.

- It assesses the quality of education systems across the world by evaluating students in science, mathematics and reading.

- **Criteria:**
    ✓ The two-hour computer-based test focuses on **15-year-old students** as they have either completed or are near the end of their compulsory education in most countries.
    ✓ PISA requires the examinees to have finished at **least six years of formal schooling.**

➢ **Leadership for Academicians Program (LEAP)**

- The Government has launched LEAP for higher education faculty.

- It is a three weeks Flagship leadership development training programme (2 weeks domestic and one week foreign training) for **second level academic functionaries in public funded higher education institutions**.

- **The main objective** is to prepare second tier academic heads who are potentially likely to assume leadership roles in the future.

- **The implementation** of LEAP Programme will be through 15 NIRF top ranked Indian Institutions namely. The foreign Universities identified for the training are also within the top 100 in the world global rankings.

➢ **Annual Refresher Programme in Teaching (ARPIT)**

- Centre has launched ARPIT for higher education faculty. It is a unique initiative for *online professional development* of 15 lakh higher education faculty using *MOOCs platform SWAYAM.*

- For implementing ARPIT, 75 discipline-specific institutions have been identified and notified as National Resource Centres (NRCs) in the first phase, which are tasked to prepare online training

material with focus on latest developments in the discipline, new & emerging trends, pedagogical improvements and methodologies for transacting revised curriculum.

- ARPIT will be an *ongoing exercise* so that every year NRCs will continuously develop new refresher module in their earmarked discipline each year. The training materials will be uploaded and made available through SWAYAM. NRC will publish the list of the faculty who have been certified.

- NRCs are *located in a mixed range of institutions* such as, Central Universities, IISc, IUCAA, IITs, IISERs, NITs, State Universities under the Ministry's Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT); UGC's Human Resource Development Centres (HRDCs), National Institutes for Technical Teachers Training (NITTTRs), IIITs and IGNOU.

➢ **Institution's Innovation Council (IIC) Program**

- The Government has launched the 'Institution's Innovation Council (IIC) program under Innovation cell of MHRD.

- **The purpose of formation** of network of IICs is to encourage, inspire and nurture young students by exposing them to new ideas and processes resulting in innovative activities in their formative years.

- **More than 1000 Higher Education Institutions (HEIs)** have already formed IICs in their campuses and enrolled for the IIC network managed by MHRD's Innovation cell to promote innovation through multitudinous modes leading to an innovation promotion eco-system in their campuses.

➢ **IMPRESS, SPARC Schemes Research Work To Begin In January 2019**

- The objective of **Impactful Policy Research in Social Sciences (IMPRESS)** is to identify and fund research proposals in social sciences with maximum impact on the governance and society.

- Under IMPRESS, 1,500 research projects will be awarded for two years to support social science research in the higher educational institutions**.**

- **The Indian Council of Social Science and Research (ICSSR)** will be the project implementing agency.

- Meanwhile, the **Scheme for Promotion of Academic and Research Collaboration (SPARC)** aims at building the research ecosystem of India's higher educational institutions by facilitating academic and research collaborations between Indian and foreign institutions.

- **IIT-Kharagapur** is the national coordinating institute to implement the SPARC programme. The idea is to stop brain drain and provide facility so that they can do research in India which is of international level.

➢ **Digital Literacy Library by Facebook**

- Facebook recently announced the launch of a **Digital Literacy Library** to help young people build the skills they need to **safely enjoy online technology.**

- The interactive lessons and videos, **developed in partnership with the team at the Berkman Klein Center for Internet and Society** at **Harvard University** for educators of youth aged 11 to 18, can be downloaded for free.

- Created from more than 10 years of academic research and built in consultation with teens, the curriculum is divided into five themes: **Privacy and Reputation, Identity Exploration, Positive Behavior, Security, and Community Engagement**

- Earlier this year Facebook added a **Youth Portal**, which includes tips for young people on things like security and reporting content.

- In addition, Facebook has begun to roll out educational guidance into its new app, **Messenger Kids**, aimed at the under-13 crowd.

➢ **Happiness Curriculum**

- In the august presence of Dalai Lama, the Delhi government has launched a **happiness curriculum** in state-run schools

- It will be taught to around eight lakh students from nursery up to Class 8 of all Delhi government schools from the new academic session

- The curriculum involves a **happiness period** of 45 minutes and 5 minutes of meditation before each class. A team of 40 experts framed the curriculum that will include meditation, moral values and mental exercises.

➢ **Student Police Cadet Programme**

- The **Ministry of Home Affairs** launched the nationwide **Student Police Cadet (SPC) programme**, which aims to build a bridge between the police and school students by inculcating values and ethics in them through classes.

- In the initial phase, it will be implemented in **all government schools** in urban and rural areas across the country and later it will be expanded to cover all schools The teachers will act as community police officers (CPOs) and additional CPOs, who will be trained by the police.

- The programme focuses on around **four crore students of Classes 8 & 9** and special care has been taken to ensure that it does not lead to increase in the workload of the students. The programme **does not have any prescribed textbook nor is any exam envisaged**. Only one class in a month is proposed.

- A handbook has been prepared by the Bureau of Police Research and Development for imparting instructions with the support of **NCERT.**

➢ **IIT Bombay Tops in QS Rankings**

- The **Indian Institute of Technology Bombay has emerged on top** in the first-ever standalone prestigious Quacquarelli Symonds (QS) rankings (a British company specialising in education) for Indian institutions of higher education..

- Seven out of the top ten positions were occupied by IITs in these rankings as **IIT Madras, IIT Delhi and IIT Kharagpur bagged the third, fourth and fifth slots respectively. IISc bagged the second spot on the list.**

- **Massachusetts Institute of Technology (MIT) is the world's best university** as per the list. In the World University rank list, **IIT Bombay** has been placed 162 rank followed by the foremost research institute of India IISc at 170.

HEALTH AND SANITATION

➢ **India Health Fund**

- *Tata Trust* and *The Global Fund* backed Indian Health Fund (IHF) has chosen four innovators for early detection of tuberculosis (TB), malaria to effectively tackle and eradicate these diseases.

- The aim for selecting these innovators aims at leveraging technology for improving early detection and prompt treatment along with promoting diagnostics feasible for primary health care facilities.

- Government has set a target of eliminating TB by 2025 and malaria by 2030. India contributes to 27% of the global TB burden and 68% of all malaria cases in the Southeast Asia region

- **India Health Fund (IHF) was launched in 2016 by Tata Trusts in collaboration with The Global Fund, to drive innovations towards key infectious disease challenges in India.**

➢ **Common Service Centres (CSCs) To Implement Ayushman Bharat**

- Ministry of Health's **National Health Agency (NHA)** signed a memorandum of understanding with Ministry of Electronics and Information Technology's **Common Service Centres (CSCs)** to implement the Ayushman Bharat scheme through three lakh CSCs across the country.

- CSCs are physical facilities for **delivering Government's e-Services to rural and remote locations** where availability of computers and internet was negligible or mostly absent

- CSCs act as access points for delivery of essential public utility services, social welfare schemes, healthcare, financial, education and agriculture services, apart from host of B2C services to citizens in rural and remote areas of the country.

Ayushman Bharat
- AB-NHPM will subsume the on-going centrally sponsored schemes – Rashtriya Swasthya Bima Yojana (RSBY) and the Senior Citizen Health Insurance Scheme (SCHIS).
- Ayushman Bharat is the National Health Protection Scheme, which will cover over 10 crore poor vulnerable families (around 50 crore beneficiaries) providing coverage of *up to ₹5 lakh (per family per year) for* **secondary and tertiary care hospitalisation**.

➢ **Health Policies To Cover Mental Illness**

- Insurance regulator IRDAI has recently **issued a circular directing insurer to cover** mental ailments such as schizophrenia, bipolar disorder etc.

- The **Mental Healthcare Act, 2017 made it mandatory to provide "for medical insurance for treatment of mental illness".** But to date, none of India's 33 insurers has complied, even though such covers are commonplace in many countries.

➢ **National Health Stack**

- **NITI Aayog** has proposed the creation of **National Health Stack (NHS)**, a centralized health record for all citizens of the country, in order to streamline the health information and facilitate effective management of the same.

- The NHS is proposed to be the **country's first futuristic nationally shared digital healthcare infrastructure**, with a view to implement the *Centre's flagship scheme Ayushman Bharat* and other public healthcare programmes in the country.

- It will be able to *host digital health records for all citizens by 2022*. The key components of the National Health Stack are :
  - o **National health electronic registries**,
  - o **Federated personal health records framework** to solve twin challenges of access to their own health data by patients and availability of health data for medical research,
  - o **Coverage and claims platform** to support large health protection schemes,
  - o **National health analytics platform**.
- **Other horizontal components** including unique Digital Health ID, Health Data Dictionaries and Supply Chain Management for Drugs, payment gateways.

➢ **India Launches Its First National Healthcare Facility Registry**

- The **Union Ministry Of Health And Family Welfare** has launched the National Health Resource Repository (NHRR) with ISRO as technology partner.
- It will be the **first ever registry in the country** which will facilitate registry of authentic, standardized and updated geo-spatial data of all public and private healthcare.
- NHRR will be the **ultimate platform for comprehensive information of both private and public healthcare establishments** including Railways, ESIC, Defence, and Petroleum heath establishments.

➢ **Allied and Healthcare Professions Bill 2018**

- The Union Cabinet has approved the Allied and Healthcare Professions Bill, 2018 for regulation and standardization of education and services by allied and healthcare professionals.
- It provides for the establishment of a Central and corresponding State Allied and Healthcare Councils; 15 major professional categories including 53 professions in Allied and Healthcare streams.
- The Bill provides for **Structure, Constitution, Composition and Functions of the Central Council and State Councils**, Framing policies and standards, Regulation of professional conduct, Creation and maintenance of live Registers, provisions for common entry and exit examinations, etc.
- **The Central Council** will comprise 47 members, of which 14 members shall be ex-officio representing diverse and related roles and functions and remaining 33 shall be non-ex-officio members who mainly represent the 15 professional categories.
- **The State Councils** are also envisioned to mirror the Central Council, comprising 7 ex-officio and 21 non-ex officio members and Chairperson to be elected from amongst the non-ex officio members. The State Council will undertake **recognition of allied and healthcare institutions**.
- **Professional Advisory Bodies** under Central and State Councils will examine issues independently and provide recommendations relating to specific recognized categories.
- **Offences and Penalties** clause have been included in the Bill to check malpractices.
- The Bill also **empowers the Central and State Governments to make rules**.

➢ **India State-Level Disease Burden Initiative**

• The report is a joint initiative of the Indian Council of Medical Research **(ICMR),** the **Public Health Foundation of India (PHFI**), and the **Institute for Health Metrics and Evaluation (IHME)** in collaboration with the **Ministry of Health and Family Welfare**.

• **Key Findings During The Period of 1990 to 2016:**

  o Indians have registered a 50% increase in the prevalence of ischemic heart disease and stroke.

  o Number of *diabetes cases* have climbed up from 26 million to 65 million.

  o **State-wise Disease Burden:**

    ▪ **Punjab** has been ranked at the top for the burden of ischemic heart disease, followed by Tamil Nadu, and vice-versa for diabetes.
    ▪ **West Bengal** topped with the largest number of stroke cases followed by Odisha.
    ▪ **Kerala** was ranked at the top for the burden of cancer, followed by Assam.

  o **Being overweight** was found to be a major risk factor for diabetes doubled in every State of India from 1990 to 2016.

  o According to the data released by the India State-level Disease Burden Initiative, **Suicide** is the leading cause of death in the 15-39 years age group in India.

➢ **All India Institute Of Ayurveda (AIIA): New Delhi**

• AIIA is an **autonomous institute** under the **Ministry of AYUSH,** also the first medical institute under Ministry of AYUSH to hold the status of **NABH accreditation.**

• It is **setup along the lines of AIIMS**.

• Its key functions are:

✓ To bring synergy between the traditional wisdom of Ayurveda and modern diagnostic tools & technology.

✓ The hospital will provide outpatient services and free medicines.

✓ It will also house a panchakarma clinic, kriya kalpa, diabetic retinopathy clinic, kshara evum anushastra karma, and an infertility clinic.

➢ **Ban On Growth Drug Oxytocin**

• **Major curbs on the production and sale of growth hormone oxytocin** came into effect from July 1 with the government determined to end its misuse**.**

• All private manufacturing of oxytocin will end from July 1 and its production for domestic **use will be restricted to only one public sector company, Karnataka Antibiotics and Pharmaceuticals Limited (KAPL).**

• This move follows a previous ban on imports of oxytocin used heavily in enhancing puberty among child victims of sex trafficking, inducing child birth and boosting the growth of vegetables and fruits.

> **Oxytocin** is a **neurotransmitter and a hormone** produced in the **hypothalamus.** From there, it is transported to and secreted by the pituitary gland at the base of the brain. It plays a **role** in the **female reproductive functions from sexual activity to childbirth and breast feeding.**

➢ **Suvidha Bio-Degradable Napkins**

- In a move to improve menstrual hygiene practices in India, the government will offer fully **biodegradable low-cost sanitary napkins called Suvidha** at all of its *Pradhan Mantri Janaushadi Pariyojana stores.*

- It was released by the **Bureau of Pharma PSUs of India (BPPI)**, in association with the department of pharmaceuticals, **on the occasion of World Environment Day**.

> **Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP**): It is a campaign launched by the Department of Pharmaceuticals to provide quality medicines at affordable prices to the masses**.** PMBJP stores have been set up to provide generic drugs, which are not only affordable but are equivalent in quality and efficacy as expensive branded drugs.**Bureau of Pharma PSUs of India (BPPI)** is the implementation agency for PMBJP.

➢ **HIV/AIDS Act, 2017**

- The government has notified the Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (Prevention and Control) Act, 2017 and it came into force on the 10th September 2018.

- It makes **Anti-Retroviral Treatment (ART) a legal right** for all HIV/AIDS patients. It has also adopted **"test and treat" policy** which means any person testing positive will be entitled for free treatment by the state and central government.

- It empowers a person living with HIV to **report discrimination** meted out against them in fields of employment, health care services, educational services, public facilities, property rights, holding public office, and insurance.

- It **penalises "propagation of hatred" against the protected person**. Violator could be punished with a minimum jail term of 3 months to a maximum of 2 years and can be fined up to Rs 100000.

- It provides for **confidentiality of HIV-related information** and makes it necessary to get **informed consent for undertaking** HIV tests, medical treatment and research.

- It is mandatory for state governments to **appoint an Ombudsman** to inquire into complaints related to the violation of the Act and the provision of health care services**.**

➢ **Three Northeastern States Emerge As New HIV Hotspots**

- According to the Ministry of Health and Family Welfare, **Meghalaya, Mizoram and Tripura** have emerged as the new hotspots for HIV. However, the good news is that there has been a steady decline in the number of HIV cases in India.

- The Ministry attributed the reason for the rise in the three northeastern States to the high-risk behaviour of Injecting Drug Users (IDUs), and unsafe sexual practices

- **Acquired Immunodeficiency Syndrome (AIDS)** is a life-threatening disease caused by the **Human Immunodeficiency Virus** (HIV). HIV makes it difficult for the body to fight infections .The medicines that treat HIV are called antiretroviral drugs and the consequent therapy is called **Anti-Retroviral Therapy (ART)**

- A new report from Joint UN Agency on AIDS (UNAIDS) titled '**Miles to go - closing gaps, breaking barriers, righting injustices**' bears good news : Today, three out of four people with HIV know their status, and 21.7 million get treatment.

- World AIDS Day is held on **1st December** each year.

> **'90-90-90' Programme of UN:** By 2020, 90% of all people living with HIV will know their HIV status. By 2020,

90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy. By 2020, 90% of all people receiving antiretroviral therapy will have viral suppression.

➢ **Severe Acute Malnutrition (SAM)**

- The National Technical Board on Nutrition (NTBN) has approved **country's first-ever** guidelines – proposed by Ministry of women and child development (WCD) – for SAM.

- **Severe Acute Malnutrition**: It is the most extreme and visible form of undernutrition and is a major cause of death in children under 5.

- Children suffering from Severe Acute Malnutrition (SAM) have:
  - ✓ very low weight-for-height (below-3z scores of the WHO median growth standard),
  - ✓ visible wasting,
  - ✓ nutritional oedema or mid-upper arm circumference of less than 115 millimetres (in children 6–59 months).

➢ **Poshan Maah**

- Poshan Maah–being celebrated in the month of September–is an initiative of **Ministry of Women and Child Development and NITI Aayog** to give a push to Poshan Abhiyan.

- Its **objective** is to take the message of importance of nutrition to every household. It seeks to ensure '**har ghar poshan tyohar**' (every house a celebration of nutrition).

- The program focuses on **8 themes**:(1) Antenatal Care, (2) Optimal Breastfeeding, (3) Complementary Feeding, (4) Anemia, (5) Growth Monitoring, (6) Girls-education, diet, right age of Marriage, (7) Hygiene & Sanitation, (8) Food Fortification

Poshan Abhiyaan (National Nutrition Mission)
• It was launched by the Prime Minister in March, 2018 from Jhunjhunu, Rajasthan. By **the year 2020, all 36 States/UTs** and 718 districts will be covered in a phased manner.
• The Abhiyaan **targets** to reduce stunting, under-nutrition, anemia (among young children, women and adolescent girls) and reduce low birth weight by **2%, 2%, 3% and 2% per annum respectively.**

➢ **World Breastfeeding Week (August 1 to 7)**

- **World Breastfeeding Week** is a worldwide celebration held annually from **August 1st to 7th** and is dedicated to nursing mothers & to raise awareness about significance of breast milk in infant's life

- This year's theme is **Breastfeeding: Foundation for Life** and is being organised by **WABA (World Alliance for Breastfeeding Action), WHO, and UNICEF.**

- The international campaign was started in 2016 to protect, promote and support breastfeeding globally with a larger **aim to reduce malnutrition-related deaths and end poverty.**

- It commemorates the **Innocenti Declaration** signed in August 1990 by government policymakers, WHO, UNICEF and other organizations.

- Breastfeeding from the first hour of birth ensures that infants consume the colostrum, which is the first secretion from the mammary glands after giving birth. Said to be **high in antibodies**, **colostrum reduces the risk of death from hypothermia and helps in epithelial recovery**.

➢ **Leptospirosis**

• Cases of leptospirosis have been reported in Kerala in the aftermath of Flooding of the state. It is an infectious disease **caused by bacteria** belonging to the genus Leptospira.

• It can be transmitted to humans through cuts and abrasions of skin, or through the mucous membranes of eyes, nose and mouth with water contaminated with the urine of infected animals.

• Outbreaks of leptospirosis are common when flooding occurs, because of exposure to contaminated water.

• Leptospirosis can be treated with antibiotics.

➢ **Leprosy Awareness**

• Supreme Court recommended the Centre and the States to take steps to increase **awareness around leprosy** in order to reduce the stigma around it.

• **Leprosy**, also known as **Hansen's disease,** is a chronic infectious disease caused by the rod-shaped bacterium **Mycobacterium leprae**.

• **Leprosy is curable with a treatment** known as **multidrug therapy(MDT)** and upon the administration of the first injection, it ceases to be contagious.

• India is a member of the UN General Assembly that unanimously passed the ***Resolution on the Elimination of Discrimination against Persons affected by Leprosy and their Family Members, 2010.***

• In India, the **National Leprosy Eradication Programme (NLEP)** is the centrally sponsored health scheme of the Ministry of Health and Family Welfare. While the NLEP strategies and plans are formulated centrally, the programme is implemented by States and Union Territories (UTs). The programme is also supported by WHO, ILEP, and few other NGOs.

• The **SPARSH Leprosy Awareness Campaign (SLAC)** was launched in January 2017 and is a program intended to promote awareness and address the issues of stigma and discrimination

• For ease of reporting and data management of registered leprosy cases, NLEP has launched **Nikusth, a web**-**based reporting system** in India. Nikushth will be helpful in keeping track of all the activities being implemented under the NLEP.

➢ **Lymphatic Filariasis**

• Lymphatic filariasis (LF), commonly known as **elephantiasis**, is a neglected tropical disease. Infection occurs when filarial parasites are transmitted to humans through mosquitoes.

• Lymphatic filariasis is caused by infection with parasites classified as nematodes (roundworms) of the family Filariodidea, which is of three types of which **Wuchereria bancrofti**, is responsible for 90% of the cases.

Global Alliance to Eliminate Lymphatic Filariasis (GAELF)
GAELF is alliance of partners from 72 LF endemic national country programmes, NGOs, private sectors, academic and research institutes and international development agencies that assists WHO Global Programme to Eliminate Lymphatic Filariasis. It was formed in 2001, since then it is being held biennially.

➢ **Nikshay 2.0**

- Union Health Ministry launched Nikshay Version 2.0, the *web-based application of RNTCP*. It is an upgraded version of earlier application with better user interface and data structures.

- **Nikshay Aushadi Portal** is a web-based application for the management of Anti-Tuberculosis (TB) Drugs and other commodities under **Revised National Tuberculosis Control Program (RNTCP).**

- **RNTCP was launched as a national program in 1997**. It is **based on *DOTS (Directly Observed Treatment, Short Course) strategy*** recommended by **WHO.** Its vision is to achieve a "TB free India" by achieving Universal Access to TB control services**.**

➢ **Pneumonia and Diarrhoea Progress Report 2018**

- The report is released by the **International Vaccine Access Center (IVAC) at the Johns Hopkins Bloomberg School of Public Health**.

- The report, released on November 12 ahead of the 10th annual World Pneumonia Day, reviews progress and gaps in coverage of interventions to "protect against, prevent and treat" **pneumonia and diarrhoea**.

- The report lists exclusive breastfeeding, vaccination, access to care and use of antibiotics, oral rehydration solution, and zinc supplementation as key interventions to help prevent and treat **pneumonia and diarrhoea**.

- Pneumonia is an inflammatory condition of the lung affecting primarily the small air sacs known as alveoli. It is usually caused by **infection with viruses or bacteria and less commonly by other microorganisms**, certain medications and conditions such as autoimmune diseases.

- **Diarrhea**, also spelled **diarrhoea**, is the condition of having at least three loose or liquid bowel movements each day. **The most common cause is an infection of the intestines due to either a virus, bacteria, or parasite** – a condition also known as gastroenteritis.

➢ **National Body Setup to Study Monogenic Diabetics**

A National Monogenic Diabetes Study Group has been formed to identify cases of monogenic diabetes across the country. Supported by the Indian Council of Medical Research (ICMR), the Madras Diabetes Research Foundation (MDRF) and Dr. Mohan's Diabetes Specialities Centre (DMDSC) will be the national coordinating center for the study group.

Monogenic Diabetics

Monogenic diabetes is a group of disorders where mutation of a single gene causes diabetes; the three commonest forms being – Maturity Onset Diabetes of the Young (MODY), Neonatal Diabetes Mellitus (NDM) and Congenital Hypoglycaemia.

Factors of Monogenic Diabetes:

- Monogenic diabetes is usually passed on in an autosomal dominant gene, (a sex independent gene that's inherited from one of the parents). This means only one copy of the mutation is needed to develop diabetes.

- There is usually a strong family history of diabetes and in multiple generations, (although it's possible for someone to have a spontaneous mutation).

- Monogenic diabetes patients are also usually antibody negative, (though there are cases where low levels of antibodies have been detected).

In addition to blood sugar issues, some of the forms of Monogenic diabetes involve metabolic issues such as:

- Growth problems.

- Impaired glycogen storage in the liver.

- Impaired fatty acid metabolism.

- Exocrine pancreatic insufficiency.

➢ **Swasth Bharat Yatra**

- The Government has recently launched a national campaign Swasth Bharat Yatra, under which a pan-India cycle rally is being organized to sensitize people about *eating safe food, combat food adulteration, & be healthy* which will compel food businesses to manufacture only those products.

- The campaign has been launched by central government, in association with states, from Oct' 16, on occasion of the World Food Day. The World Food Day is celebrated every year on Oct' 16 in honor of the date of founding of the *Food and Agriculture Organisation of United Nations* in **1945.**

- The **Food Safety and Standards Authority of India (FSSAI)** is leading this campaign where about 7,500 cyclists are expected to participate in over 18,000 km relay cycle rally to propagate the message **Eat Right India.**

➢ **Eat Right Movement**

- **Food Safety and Standards Authority of India (FSSAI) unveiled** '**The Eat Right Movement**', built on two broad pillars of '**Eat Healthy**' and '**Eat Safe.**

- The programme aims to engage and enable citizens to improve their health and well-being by making the right food choices.

- Stating that its aim was to *cut down salt/sugar and oil consumption by 30% in 3 years*, FSSAI will issue guidelines for labeling of packaged foods in next one year .

- India is becoming the **diabetes capital of the world**, cases of anaemia and micronutrient deficiencies are on the rise, and non-communicable diseases (NCDs) account for 1 in 5 disease-related deaths.

- A study published in the **Indian Journal of Community Medicine** in 2015 shows that 80 percent of NCD deaths happen from heart disease, cancer, respiratory problems or diabetes.

- With the WHO calling for a complete removal of trans fat from the food supply by 2023, various snack and food associations and restaurant associations have committed to phase it out by 2022 with the pledge '**India@75 – freedom from trans fat by 2022**.'

- **Rajkummar Rao's** has been roped **in for promotional ad campaign named : "Aaj se Thoda kam"**

➢ **Swachhata Hi Seva**

- PM Narendra Modi launched the "Swachhata Hi Seva" ("cleanliness is service") campaign. The campaign has been launched to push for greater public participation in Swachh Bharat Abhiyan which was launched on October 2, 2015.

- It is being organized in run up to 4th anniversary of the Swachh Bharat Mission, on October 2nd, 2018, which will also mark the commencement of the 150th year celebrations of Mahatma Gandhi.

➢ **Kayakalp Scheme**

- Encouraged by the achievements of Kayakalp Scheme, NABH has decided to consider assessment of healthcare facilities in the private sector on the lines of parameters of Kayakalp Scheme

- Kayakalp awards were launched by Union Health Ministry in 2015 to **felicitate Public Health Facilities (PHCs)** for maintaining **high standards of sanitation and hygiene.**

- **Objective** is to inculcate culture of cleanliness for gaining the trust and confidence of community in these facilities.

- NABH, established in 2006, is a constituent board of **Quality Council of India Certification**, set up to establish and operate accreditation programme for healthcare organizations.

➢ **#LooReview Campaign**

- **The Ministry of Housing and Urban Affairs,** under the aegis of Swachh Bharat Mission – Urban (SBM – U), has partnered with **Google** to launch the Loo Review campaign.

- **Objective of the joint campaign – to be run throughout October and November 2018** – is to increase the awareness and ease of locating public toilets across India.

- The campaign aims to encourage **Local Guides in India** to rate and review public toilets on Google Maps, and use the hashtag #LooReview for the chance to be featured on Google Local Guides' social channels.

➢ **Alcohol Addiction**

- According to a report by the World Health Organisation (WHO), **per capita alcohol consumption in India has more than doubled from 2005 to 2016.**

- **The per capita liquor consumption in India increased from 2.4 litres in 2005 to 5.7 litres in 2016 with 4.2 litres** being consumed by men and 1.5 litre by women.

- Globally more than a **quarter (26.5%) of all 15-19-year-olds i.e. adolescents** are current drinkers.

- In 2016, the harmful use of alcohol resulted in some **three million deaths (5.3% of all deaths) worldwide. Mortality resulting from alcohol consumption is higher than that caused by diseases such as tuberculosis, HIV/AIDS and diabetes.**

➢ **Swachh Survekshan Grameen 2018**

- The Ministry of Drinking Water and Sanitation has launched the **Swachh Survekshan Grameen 2018** (SSG 2018). A sample survey covering 75 districts was undertaken in 2016. However, this will be the first such comprehensive all-India evaluation.

- The publicity of the event is also backed by a launch of a visual publicity campaign, featuring **Swachh Bharat ambassadors Amitabh Bachchan and Sachin Tendulkar**

- During the process, **65% weightage has been assigned to the findings and outcome from the survey and 35% to the service level parameters** to be obtained from the Integrated Management Information System of the Ministry of Drinking Water and Sanitation.

- An independent survey agency will conduct the survey in all districts from 1st to 31st August 2018, and the results will be announced in the form of a ranking of all districts and states.

- Awards for Swachh Survekshan Grameen (SSG) 2018 were recently conferred at the concluding session of Mahatma Gandhi International Sanitation Convention.

- **Overall Ranking:**
  - ✓ **Top 3 States**-1) Haryana, 2) Gujarat 3) Maharashtra
  - ✓ **Top 3 Districts** 1) Satara, Maharashtra 2) Rewari, Haryana 3) Pedapalli, Telanga

➢ **Mahatma Gandhi International Sanitation Convention (MGISC)**

- It is a **four-day international conference(sep 29- Oct 2)** that would bring together Sanitation Ministers and other leaders in **WASH** (the collective term for Water, Sanitation, and Hygiene) from around the world

- It is being organized by the Government of India's **Swachh Bharat Mission (SBM)** or Clean India Mission, the world's largest sanitation programme

- The Convention aims to share sanitation success stories and lessons from the participating countries and will culminate with the launch of the Mahatma's 150th birth year celebrations in India, as SBM enters its final year of implementation.

- **The success of the Clean India Mission will undoubtedly have a significant impact on the global achievement of SDG 6.2** *i.e., achieving access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations by the year 2030.*

➢ **WHO Guidelines On Sanitation And Health**

- World Health Organization (WHO) recently launched its **first global guidelines on sanitation and health.**

- WHO developed the **new guidelines** on sanitation and health **because current sanitation programmes are not achieving anticipated health gain**s and there is a lack of authoritative health-based guidance on sanitation

- **Transmission of a host of diseases, including cholera, diarrhoea, dysentery, hepatitis A, typhoid and polio, is linked to dirty water and inadequately treated sewage.**

- The new guidelines set out **four principal recommendations**:
  - ○ **Sanitation interventions should ensure entire communities** have access to toilets that safely contain excreta.
  - ○ **The full sanitation system should be undergo local health risk assessmen**ts to protect individuals and communities from exposure to excreta – whether this be from unsafe toilets, leaking storage or inadequate treatment.
  - ○ **Sanitation should be integrated into regular local government-led planning** and service provision to avert the higher costs associated with retrofitting sanitation and to ensure sustainability.
  - ○ The health sector should invest more and play a coordinating role in sanitation planning to protect public health

WOMEN RELATED ISSUES

➢ **Delhi Police Gets India's First All-Women SWAT Team**

• Delhi Police is the first police force in the country to have an all-women *Special Weapons And Tactics (SWAT) team*.

• Trained by specialists from India and abroad, 36 women constables from northeastern states have been inducted into the squad after a rigorous 15-month training. It is the brainchild of police commissioner Amulya Patnaik.

• **They are trained in the Israeli Krav Maga**, an **unarmed combat style** and equipped with MP5 submachine guns and Glock 21 pistols.

• These commandos will be stationed at strategic locations in central and south Delhi. Many of them would be posted in **anti-terror vans called Parakram.**

➢ **Indecent Representation of Women (Prohibition) Act (IRWA)**

• The Indecent Representation of Women (Prohibition) Act (IRWA), 1986 prohibits indecent representation of women through advertisements, publications, writings, paintings, figures or in any other manner.

• Indecent representation of women' has been changed **to "the depiction of the figure or form of a woman in such a way that it has the effect of being indecent or derogatory or is likely to deprave or affect public morality".**

• Amendment in definition of the term advertisement to include digital form or electronic form or hoardings, or through SMS, MMS etc.

• Bringing the Act in tune with the **Information Technology Act, 2000, it expands the existing Section 4 of the Act** which prohibits publication or sending by post books and pamphlets with such indecent representation**.**

• Creation of a *Centralised Authority* under the aegis of National Commission of Women (NCW).

➢ **Compensation Scheme for Women Victims/Survivors of Sexual Assault/Other Crimes-2018**

• The Supreme Court has stated that the scheme proposed by the **National Legal Services Authority (NALSA)** for compensating victims of sexual assault and acid attack should be modified to "some extent" to **make it applicable to child victims** of such assaults.

• It provides for the creation of a **dedicated Women Victim Compensation Fund** within the already existing State Victim Compensation Fund.

• The Supreme Court has also mandated that no Victim shall be paid less than what is stipulated in the scheme, but with the liberty that the States can enhance compensation beyond what this Scheme provides.

• As per NALSA's scheme, victim of *gangrape* in any part of the country would now get a minimum compensation of Rs 5 lakh and up to a maximum of Rs 10 lakh. Similarly, in case of *rape and unnatural sexual assault*, the victim would get a minimum of Rs 4 lakh and maximum of Rs 7 lakh as compensation

• It also has provisions for victims of Acid Attacks and burning cases.

- Another unique feature of the scheme is that for the first time mandatory reporting of cases is stipulated. Now **police is obliged to report all cases covered in the Scheme with concerned SLSA/DLSA** by sharing soft/hard copy of FIR as and when lodged.

> **NALSA**
> - NALSA was formed in 1995 under the authority of the **Legal Services Authorities Act 1987.**
> - It's mandate is to provide free legal services to the weaker sections, to organize Lok Adalats for amicable settlement of disputes and to spread legal literacy.
> - **The Chief Justice of India is patron-in-chief** of NALSA while second senior most judge of Supreme Court of India is the **Executive-Chairman.**

➢ **India's First Advanced Forensic Lab Dedicated To Women Related Cases**

- In order to address the gaps in forensic DNA analysis, the Ministry of Women and Child Development laid the foundation of *Sakhi Suraksha Advanced DNA Forensic Laboratory* in Central Forensic Science Lab (CFSL), Chandigarh**.**

- It will be funded from the **Nirbhaya Fund.**

- There will be **4 units**: **Sexual Assault And Homicide Unit, Paternity Unit, Human Identification Unit and Mitochondrial Unit.**

- Further, 5 more advanced forensic labs would come up in *Mumbai, Chennai, Guwahati, Pune and Bhopal* in the next 3 months bringing the total minimum annual capacity of the labs to 50000 cases.

- The Labs in Chennai and Mumbai would be set up with WCD funds while remaining 3 labs would be set up with funds by Home Ministry.

➢ **India Among 90 Countries Without Paid Paternity Leaves**

- According to a **UNICEF analysis**, as a part of its **Super Dads** campaign, India is among 90 countries in the world which do not offer paid paternity leaves.

- Almost two-thirds of the world's children under one year old - nearly 90 million - live in countries where their fathers are not entitled by law to a single day of paid paternity leave.

- **India and Nigeria**, which have high infant populations, are among 92 countries that do not have national policies in place that ensure new fathers get adequate paid time off with their newborn babies.

- Leading by example earlier this year, UNICEF modernised its approach to parental leave provisions, with up to **16 weeks of paid leave for paternity across all of its offices worldwide** - the *first United Nations agency to extend such leave* beyond the standard four weeks.

- **The Maternity Benefit (Amendment) Act, 2017** has increased the **duration of paid maternity leave** available for women employees from the **existing 12 weeks to 26 weeks.**

> **Super Dads Campaign:** It is a campaign launched by the United Nations Children's Fund (UNICEF) that celebrates a father's essential role in a child's early cognitive development. The Super Dads initiative is a part of a larger campaign called **#EarlyMomentsMatter** which aims to bring awareness to the significance of early childhood experiences on a child's future.

➢ **Assam Bill Against Witch-Hunt**

• President Ram Nath Kovind gave his assent to the **Assam Witch Hunting (Prohibition, Prevention and Protection) Bill, 2015** that the Assam assembly had passed three years ago.

• President's assent is required when an act passed by a state Assembly contravenes central law. In this case, the act contravenes sections of the Indian Penal Code (IPC) which deal with such crimes.

• It makes every offence under the Act "**cognizable, non-bailable and non-compoundable.**" The Act prescribes a prison term of up to **7 years** and up to **₹5 lakh** in fine for calling a person a witch. Punishment for leading a person to commit suicide after intimidating, stigmatising, defaming and accusing her as witch, may be extended to **life imprisonment**, along with Rs 5 lakh fine.

• The earliest concerted move to fight the practice was **Project Prahari** as a model of community development that brought together various sections of the rural society to combat witch-hunting by focusing on alternative livelihood skills.

• **Mission Birubala**, has been at the **forefront of Assam's anti-witch-hunt** campaign since 2011.

➢ **Decriminalization of Section 497 IPC**

The Supreme Court (SC) decriminalized the offence of adultery by holding **Section 497** of the Indian Penal Code (IPC) and **Section 198(2)** of the Code of Criminal Procedure as unconstitutional.

➢ **Sexual Assault Evidence Collection Kits (SAECK)**

• Police stations in India will be soon distributing "Sexual Assault Evidence Collection Kits (SAECK)" to carry out immediate investigation into sexual assault cases.

• **SAECK or 'rape investigation kits'** are designed to carry out immediate medico-legal investigation and aid in furnishing evidence in sexual assault cases.

• Using these, police can collect blood and semen samples, besides other evidence, to carry out immediate investigation into sexual assault cases.

➢ **Wage Compensation Scheme For Pregnant Women In Tea Gardens Of The State**

• The tea-producing belt of upper Assam, comprising Dibrugarh, Jorhat, Sivasagar and Tinsukia, has one of the country's worst maternal mortality rates (MMR) due to anaemia and other diseases.

• The Annual Health Survey of 2012-13 puts MMR at 404 in the tea gardens, whereas the state's average is 301. The national average during 2014-16 was 130.

• Each woman will get **Rs 12,000** so that she can look after herself and her unborn baby without affecting the livelihood of her family.

➤ **Live-in Couples Can Adopt Children**

The Child Adoption Regulatory Authority (CARA), has allowed Individuals in a live-in relationship to once again adopt children from and within India.

Child Adoption Regulatory Authority (CARA)
• CARA is the **nodal body for adoption of Indian children.** It regulates in-country and intercountry adoptions *(in accordance with the provisions of **The Hague Convention on Inter- Country Adoption, 1993)***
• It is an autonomous body of the Union Ministry of Women and Child Development.

CHILD RELATED ISSUE

➤ **POCSO Act**

• **Section 19 of POCSO Act**, which deals with sexual crimes against children, lays down the procedure for reporting a crime but **doesn't specify a time limit or statute of limitation for reporting it**.

• Whereas **CrPC lays down different time limits for crimes which carry a punishment of upto 3 years**. However, there is no time bar for crimes that would attract a jail term of more than 3 years.

• Reacting to the development, the Women and Child Development Minister said that now any victim, at any age can complain the sexual abuse faced by them as a child and urged them to come forward and report through the POCSO e-Box.

• **POCSO e-Box is a complaint management system that operates completely online for reporting sexual offences against children**. The e-Box can be accessed through the official website of National Commission for Protection of Child Rights.

➤ **Parliament Passes Criminal Law (Amendment) Bill 2018**

• Parliament has passed the Criminal Law (Amendment) Bill 2018 that proposes to enhance punishment for rape of Minors. It **amends relevant Sections of the IPC, CrPC and the POCSO Act.**

• The Bill provides for **time-bound investigation (**it must be completed within two months).

• The case is to be tried in a **fast track court**. Any appeal against a sentence by the trial court **must be disposed of within six months**

• Moreover, the accused is **not entitled to anticipatory bail**, in offences involving a child less than 16 years of age.

➤ **Make Child Marriages Invalid**

• In 2006, India passed **Prohibition of Child Marriage Act (PCMA) -** by replacing the *Child Marriage Restraint Act 1929* - to combat widespread practice of child marriage. The PCMA prohibits the solemnization of child marriage below the age of *18 for girls and 21 for boys*.

• Currently, **child marriages are valid in India**, but can be annulled if a case is filed in a district court by either of the two contracting parties within two years of becoming an adult, or through a guardian in case of minors

---

- The Ministry seeks to make child marriages "***void ab initio***" (invalid from the outset) by amending section 3 of the Prohibition of Child Marriage Act, under which a child marriage is *only voidable at the option of the contracting parties.*

- In October 2017, the Supreme Court held that sexual intercourse by a man with his wife, who is below 18 years of age, is rape.

➢ **Begging Decriminalized in Delhi**

- The act of begging was made a criminal offence after the **Bombay Prevention of Begging Act 1959** was extended to Delhi by a Central government amendment in 1960.

- Currently, there is **no central law on begging and destitution** and most states have adopted the Bombay Prevention of Begging Act 1959, or have modelled their laws on

- The Delhi High Court has decriminalized begging in the national capital on the ground that penal provisions in the law were unconstitutional. People beg as a last resort to subsistence. Criminalizing it **violates the fundamental right to life accorded under Article 21** of the Constitution.

VULNERABLE GROUPS (Senior Citizen, Minorities, OBCs, SC/STs, Disabled etc)

➢ **Gujarat Government Grants Religious Minority Status To Jews**

- Gujarat is now the **third state** in India to have granted minority status for Jews, following **Maharashtra and West Bengal.**

- With this, there are now **seven religious minorities in the state**. The other six are - Muslims, Christians, Sikhs, Parsis, Buddhists, and Jains.

- The **Union Government accords the status of minority communities to six religious** communities viz. **Muslims, Christians, Sikhs, Zoroastrians (Parsis), Buddhists, and Jains.**

- **Judaism:** It is the religion of Jewish people. It is an ancient, **monotheistic, Abrahamic religion** with the **Torah** as its foundational text. The Torah is part of the larger text known as the **Tanakh or the Hebrew bible**, and supplemental oral tradition represented by later texts such as **the Midrash and the Talmud.** Jews worship in **Synagogues** and their spiritual leaders are called **Rabbis**.

➢ **Parliament Passes National Commission For Backward Classes (NCBC) Bill**

- **123rd Constitutional Ammendment Bill** provides for grant of **constitutional status to NCBC** at par with National Commission for Scheduled Castes and the National Commission for Scheduled Tribes, which was first set up under the National Commission for Backward Classes Act, 1993.

- It states that the President may specify the socially and educationally backward classes in the various states and union territories. He may do this in consultation with the Governor of the concerned state.

- **The bill seeks to repeal the National Commission for Backward Classes Act, 1993 and insert** *Article 338B* in the Constitution in order **to set up the constitutional body**, besides inserting a new provision through *Article 342A* to provide for Parliament's approval for every inclusion into and exclusion from the Central List of OBCs.

- The Commission will consist of *a chairperson, a vice-chairperson and three other members*.

- The President will be in charge of deciding the conditions of service and the tenure of the office of all the members.

➢ **Parliament Passes SC And ST (Prevention Of Atrocities) Amendment Bill, 2018**

• The Parliament has passed the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Amendment Bill, 2018, which seeks to overturn a Supreme Court order.

• **SC mandated that a *preliminary enquiry* should be conducted before the FIR was registered** to check if the case fell within the parameters of the Act, and whether it was frivolous or motivated

• The Amendment leads to the insertion of **Section 18A** in the new Act. According to it, a **preliminary inquiry shall not be required for the registration of a FIR** against any person.

• Further, **Investigating Officer will not require approval of any authority** for arrest of accused.

• Moreover, provisions of *Section 438* of Code of Criminal Procedure, which deals with **anticipatory bail**, shall not apply to a case under this Act, notwithstanding any judgment of any Court.

• The SC/ST (Prevention of Atrocities) Act is popularly known as the SC/ST Act or the Prevention of Atrocities Act. The SC/ST Act was **enacted in 1989** and the rules for the Act were notified in 1995.

➢ **Section 377 Struck Down**

• The Supreme Court, in **Navtej Johar vs Union of India**, has **decriminalised same sex relations between consenting adults in private** under Section 377.

• **The court, however, held that the "unnatural" sexual acts like bestiality and sexual act without consent continues to be a crime under Section 377.**

• **Section 377 of IPC** defines unnatural sexual offences. According to it, "Whoever voluntarily has carnal intercourse against the order of nature with any man, woman or animal, shall be imprisoned and shall also be liable to fine**.**

• The five-judge Constitution Bench also introduced the ***Doctrine of Progressive Realisation of Rights*** to guard against future attempts to reintroduce that part of Section 377 which had made the entire LGBTQ community unconvicted felons without the basic rights of a citizen for over a century.

• Using this legal doctrine, SC has held that **once a right is recognized and given to the public, it cannot be taken back by the state at a later date** *(doctrine of non-retrogression).* Thus, once a step is taken forward, there is no going back. This doctrine of progressive realisation of rights mandates that the laws of a country should be in consonance with its modern ethos, it should be sensible and easy to apply.

➢ **Global IT Challenge for Youth with Disabilities 2018**

• **The Global IT Challenge for Youth with Disabilities, 2018**, being organised by the Department of Empowerment of Persons with Disabilities (DEPwD), Ministry of Social Justice and Empowerment in association with Rehabilitation International Korea and their associated partner LG Electronics, was held in New Delhi.

• ***The objective*** of the event is to leverage IT skills among youth with disabilities and also to spread awareness about the application of Information and Computer Technology (ICT) in enhancing the quality of life of persons with disabilities especially in Asia-Pacific region.

➢ **Sentinelese**

• An American national was killed allegedly by the Sentinelese tribe in the Andaman and Nicobar Islands after he illegally entered the protected zone on November 16.

- The Sentinelese are *a negrito tribe* who live on the *North Sentinel Island of the Andamans*. **The inhabitants are connected to the Jarawa on the basis of physical, as well as linguistic similarities**. Their numbers are believed to be less than 150 and as low as 40.

- **Based on carbon dating of kitchen middens by the Anthropological Survey of India, Sentinelese presence was confirmed in the islands to 2,000 years ago**. Genome studies indicate that the Andaman tribes could have been on the islands even 30,000 years ago.

- The Govt. of India issued the *Andaman and Nicobar Islands (Protection of Aboriginal Tribes) Regulation, 1956* to declare the traditional areas occupied by the tribes as reserves. *It prohibited entry of all persons except those with authorisation. Photographing or filming the tribe members is also an offence*. The rules were amended later to enhance penalties.

- But *restricted area permits* were relaxed for some islands recently. In a major step earlier this year, the Indian government excluded this island and 28 others in the Union Territory from the Restricted Area Permit or RAP regime till December 31, 2022. The lifting of RAP means foreigners can go to the island without permission from the government.

- They are very vulnerable to germs since they have not had contact with the outside world. Even a common flu virus carried by a visitor could wipe out the entire tribe.

Restricted Area Permit (RAP)Regime

RAP regime was notified under the foreigner (restricted Area)   Order , 1963

- Under it, foreign nationals are not normally allowed to visit protected or restricted area unless Government is satisfied that there are extra-ordinary reasons to justify their visit.

- Every foreigner, except citizen of Bhutan, who desires to enter and stay in protected or restricted area, is required to obtain special permit from competent authority having power to issue such permits to foreigner, seeking it.

- Citizens of Afghanistan, China and Pakistan and foreign nationals of Pakistani origin are exception and are not allowed to enter such areas.

➢ **Supreme Court: Not Allowing Women In Their "Menstruating Years" Into The Sabarimala Is Ultra Vires The Constitution**

• The Ayyappa temple in **Sabarimala, Kerala**, prohibits women of menstruating age **(between 10 and 50 years of age)** from entering it, a prohibition enforced under Rule 3(b) of the Kerala Hindu Places of Public Worship (Authorisation of Entry) Rules, 1965.

• The restriction finds its source in the legend that the **Sabarimala temple deity Swami Ayyappa** is a **Naishtika Brahmachari** and should not be disturbed

• The bar on entry of women between age of 10 and 50 years is "*not an essential part of the religion*," *Bar and Bench* quoted.

• Recently, the Supreme Court's constitutional bench (in ***Indian Young Lawyers Association v. State of Kerala***) has struck down a rule that disallowed girls and women in the 10-50 age group from entering the Sabarimala temple in Kerala on ground that temple rule violated their right to equality and right to worship

➢ **L-G Is Bound By Aid And Advice Of Delhi Government**

A five-judge Constitution Bench of the Supreme Court (SC) **unanimously held that Delhi Lieutenant- Governor is bound by the aid and advice of the Delhi government.**

➢ **IAS Officers For Village Outreach**

• A battalion of Central government officers has been drafted to ensure on the ground implementation as the Centre races to **saturate 117 "aspirational districts" with seven flagship social welfare schemes**

• In each village, the Central team will convene a meeting of villagers and beneficiaries along with a State government or district official, a lead bank representative and local officials from the agencies responsible for enrolling people into the schemes

• **The Ministries of Rural Development, Panchayati Raj, and the Department of Personnel and Training are jointly coordinating the drive**.

The campaign was launched under the name of "**Sabka Sath, Sabka Gaon, Sabka Vikas**". It is in line with rural development schemes like "Antyodaya" – based on the **principle of convergence and saturation.**
    The seven schemes under the Yojana are – Pradhan Mantri Ujjwala Yojana, Saubhagya, Ujala scheme, Pradhan Mantri Jan Dhan Yojana, Pradhan Mantri Jeevan Jyoti Bima Yojana, Pradhan Mantri Suraksha Bima Yojana, and Mission Indradhanush

➢ **Amendments to anti-corruption law - Prevention of Corruption (Amendment) Act, 2013**

• **According to the amendments**, a police officer will now have to take prior permission from appropriate authorities while pursuing cases against the accused.

• Further, **bankers cannot be pulled under the corruption law unless they have accumulated assets disproportionate to their income** or have misappropriated assets entrusted to them.

- According to the provisions of the bill, **criminal misconduct will now include only two offences**—misappropriating of property entrusted to you as well as amassing assets disproportionate to known sources of income.

- **Protection will now be available to all the public servants**. It was earlier available only to the post of joint secretary and above.

➢ **Government Monitoring Facebook's Data Sharing**

- The Government is studying the reports which allege that Facebook is sharing user data with at least 60 different device manufacturers including companies such as Apple, Samsung, Microsoft, Amazon and Blackberry.

- The social media company is already under fire for the data breach incident involving UK-based data analytics and political consultancy firm **Cambridge Analytica**.

- In an attempt to address these issues, government had last year set up a committee of experts under the leadership of **BN Srikrishna** to frame principles which will form the basis of legislation on data protection. It has submitted its report, the details of which are discussed in next topic.

- The most recent milestone in the growing body of data protection regulation is the **European Union General Data Protection Regulation (GDPR).** In it there is a strong emphasis on data localization requiring certain customer data to remain within the borders of a particular region or country.

➢ **Srikrishna Panel's Data Protection Report**

- The Srikrishna committee on data protection submitted its much-awaited report titled *"A Free and Fair Digital Economy: Protecting Privacy, Empowering Indians."*

- Recently, the *Clarifying Lawful Overseas Use of Data (CLOUD) Act,* passed by the U.S. Congress, seeks to de-monopolize control over data from USA authorities.

KEY RECOMMENDATIONS

Personal data shall be processed only for purposes that are clear, specific and lawful

Individuals will have the right to withdraw consent

All firms and agencies will have to appoint data protection officers

They will also act as point of contact for the individuals for raising grievances

Firms will have to ensure at least one copy of personal data to be stored in India

'Critical' personal data shall only be processed in a server or data centre located in India

Exemptions have been provided for processing of personal data for journalistic purpose, or for a purely personal or domestic purpose

Penalties range from 2-4% of a company's worldwide turnover, or fines between ₹5 crore and ₹15 crore, whichever is higher

The Centre shall notify Data Protection Authority of India

A data protection fund and a data protection awareness fund to be set up through proceeds from the penalties and the fines

Existing Acts such as Right to Information, Aadhaar and Information Technology will have to be amended

➢ **Supreme Court Verdict on Aadhaar**

- Supreme Court upheld the constitutional validity of Aadhaar scheme as pro-poor and inclusionary, but scrapped provisions of the legislation that were seen as enabling surveillance by the state.

- SC held that **Aadhaar won't be mandatory for opening bank accounts, getting a phone connection or school admissions**.

- However, it is mandatory to link Aadhar with In govt subsidies and welare schemes.come Tax Return, PAN or availing

- It held that the Aadhaar Act passes the **triple test** laid down in the **Privacy judgment** under which there ought to be a law, a legitimate state interest, and an element of proportionality in any law that seeks to abridge the right of privacy.

➤ **The Odisha Assembly Passed A Resolution For Establishing Legislative Council**

• The government will now seek the Centre's approval, post which it will need the both houses of the Parliament to approve the resolution. And finally the President's nod.

• Under Article 169, Parliament may by law provide for creation of a Legislative Council, if the Legislative Assembly of the State passes a resolution to that effect by a majority of the total membership of the Assembly and by a majority of not less than two-thirds of the members of the Assembly present and voting. Parliament can then pass a law to this effect.

• *7 States* have second house of state legislature these are **Andhra Pradesh, Bihar, Jammu and Kashmir, Karnataka, Maharashtra, Telangana and Uttar Pradesh.**

• One-third of the MLCs are elected by the state's MLAs, another 1/3rd by a special electorate comprising sitting members of local governments such as municipalities and district boards, 1/12th by an electorate of teachers and another 1/12th by registered graduates. The remaining members are appointed by the Governor for distinguished services in various fields

➤ **Delhi Launches Doorstep Delivery Of Government Services**

• Delhi government has launched its ambitious project **Phone-a-sahayak scheme** to deliver public services at the doorstep of residents. From driving licences to marriage certificates, Delhiites can now apply for 40 govt documents to be delivered at their homes for a fee of Rs. 50 per service.

• The project has been outsourced by the Administrative Reforms Department to VFS Global**.**

• The Delhi is not the first to try and mobilize the Right to Service Act (RSA) to greater efficacy. Only recently, Manipur govt announced a single-window services centre in Imphal, to be operational from November 2018 that will also include door-to-door delivery of government services.

➤ **SC Decision On Reservation In Promotion**

• In a historic decision **(Jarnail Singh v. Lachhmi Narain Gupta),** a five judge Constitution bench of the Supreme Court ruled that the **reservation in promotion is legally and constitutionally correct but the creamy layer exclusion principle (till date that applied only to OBCs) can be extended to SCs and STs (in promotion) to deny reservation to the elite among the two underprivileged communities.**

• The court in **Nagraj case** had ruled that if the state wishes to exercise their discretion and make provision for reservation in promotions for SCs/STs, the State has to collect quantifiable data showing **backwardness of the class** and **inadequacy of representation** of that class in public employment in addition to compliance of **Article 335 (efficiency in administration).**

➤ **Why It Won't Be Easy For Tamil Nadu Governor To Free Rajiv Gandhi's Killers Even After Cabinet's Nod**

• The Supreme Court held that the governor of Tamil Nadu was at liberty to decide on a mercy petition filed by AG Perarivalan, who is serving a life sentence for his role in Rajiv Gandhi's assassination.

• **In 2014, the Tamil Nadu Government tried to invoke its remission powers under Section 432 of the Code of Criminal Procedure** to release the convicts. The Centre opposed the move, arguing that since the case had been prosecuted by the Central Bureau of Investigation, the state first **needed to take the Centre's "concurrence" as required by Section 435 of the code.**

- **The dispute went to the Supreme Court, which decided in the Centre's favour in 2015, ruling that the word "consultation" in Section 435 in spirit meant "concurrence**. In its 2015 ruling, however, the apex court also said Section 435 empowering a state government to remit sentences and a Governor's pardoning power under Article 161 of the Constitution rested on different pedestals. This meant that if Tamil Nadu took the Article 161 route to free the convicts, it would not need the Centre's concurrence.

- In light of these rulings, if the Tamil Nadu Governor agrees to release the convicts, his decision is bound to be reviewed judicially.

➢ **Live Streaming Of Court Proceedings**

- The Supreme Court took a major leap in imparting transparency in functioning of judiciary by allowing live streaming of court proceedings of cases of constitutional and national importance, saying this openness was like sunlight, which is the best disinfectant.

- The top court said that sensitive cases such as those dealing with *matrimonial disputes or sexual assault* should not be live streamed. It also pointed out that in some cases the parties may have genuine reservations and may claim right of privacy and dignity.

- The final decision whether to live stream a case or not, *lies with the court*, especially in sensitive ones and such decision cannot be appealed.

- There must be a **reasonable time delay (say 10 minutes) between the live court proceedings and the broadcast**, in order to ensure that any information that ought not to be shown, as directed by the court, can be edited from being broadcast.

➢ **Witness Protection Scheme**

The Supreme Court of India has directed all the states to implement the draft witness protection scheme framed by the Centre in consultation with the *National Legal Services Authority (NALSA)*.

Objectives of The Witness Protection Scheme-2018

- To enable a witness to give testimony in a judicial setting or to cooperate with law enforcement and investigations without fear of intimidation or reprisal.

- To ensure that the investigation, prosecution and trial of criminal offences is not prejudiced because witnesses are intimidated or frightened to give evidence without protection from violent or other criminal recrimination.

- To promote law enforcement by facilitating the protection of persons who are involved directly or indirectly in providing assistance to criminal law enforcement agencies and the overall administration of Justice.

- To give witnesses the confidence to come forward to assist law enforcement and Judicial authorities.

➢ **WI-FI Choupals**

- The Union Ministry of Electronics & Information Technology (MeITY) launched 5000 Wi-Fi Choupals in villages in partnership with common service center.

- The aim of Wi-Fi Choupals **is to transform rural Internet connectivity through BharatNet**.

- They focus on developing rural Wi-Fi infrastructure and to host suitable applications to provide various ICT services at an affordable cost. They will provide 60,000 Wi-Fi hotspots in rural areas.

- BharatNet is **Centre's rural internet connectivity programme** which is implemented by **Bharat Broadband Network Limited.** It is **world's largest rural broadband connectivity programme using Optical fibre.** The project is being funded by **Universal service Obligation Fund**.

➢ **AskDisha Chatbot**

- The Indian Railway Catering and Tourism Corporation Limited **(IRCTC) has recently launched a chatbot, Ask Disha.** This **Artificial Intelligence (AI) powered chatbot** is aimed at improving the accessibility and customer services of the passengers.

- IRCTC becomes the **first and only government corporation in India** to launch a chat-enabled helpdesk service program. Jointly developed by IRCTC and Co Rover Private Limited.

- **A chatbot is a conjuncture of chat and robot**. It is **a computer program based on artificial intelligence** which conducts a conversation through text or audio messages. Such programs are often designed to depict exactly how a human would talk or answer as a conversational partner

➢ **DigiYatra**

- The Ministry of Civil Aviation has come up with a DigiYatra platform **to create a digitally unified experience for air travelers.**

- The platform will be built on 4 key pillars, Connected Passengers, Connected Airports, Connected Flying and Connected Systems.

➢ **Social Media Communication Hub**

- The **Ministry Of Information And Broadcasting** is in the process of setting up a **social media communication (SMC)** hub in **every district** across the country.

- Social Media Communication Hub (the Hub) aims to monitor, collect and analyse data across all major social media platforms, and combine this with data from e-mails, news sites, blogs and complaint web.

- Public sector firm **Broadcast Engineering Consultants India Ltd**. is handling the Social media communication hub project.

- The **Puttaswamy judgment of 2017**, affirming the right to privacy, laid down the following **three tests** to be met before the right to privacy could be invaded- **first, there must be a law, second, there must be legitimate purpose to be met, and third, the infringement of privacy must be proportional to the purpose sought to be met.**

➢ **Bengaluru-Based Think-Tank Public Affairs Centre (PAC) Has Released The Public Affairs Index 2018**

- Founded in 1994 by renowned Indian economist and scholar **late Samuel Paul**, the think tank works to mobilise a demand for better governance in the country.

- **Released annually since 2016**, the index examines *governance performance* in the states through a data-based framework, ranking them on social and economic development they are able to provide

- The **report is based** on **10 themes, 30 focus subjects and 100 indicators**, and relies solely upon government data.

- **Kerala** has topped the index as the best-governed state for the third consecutive year since 2016 among large states. Tamil Nadu, Telangana, Karnataka and Gujarat followed Kerala among the top five states delivering good governance

- **Bihar ranked the lowest**, indicating higher social and economic inequalities in the states, followed by Jharkhand and Madhya Pradesh.

- Among **smaller states** *(with a population less than two crores),* **Himachal Pradesh** topped the list, followed by Goa, Mizoram, Sikkim and Tripura.

- **Nagaland, Manipur and Meghalaya** were ranked at the bottom of the index among small states.

➢ **The Legal Information Management and Briefing System(LIMBS)**

- LIMBS is a Ministry of Law and Justice initiative.

- **The idea is to reduce government litigation and make government litigation more efficient**. At the moment, **LIMBS is applicable only to the civil cases.**

- Earlier, information about cases involving 64 ministries/departments was scattered in different places typically in the form of physical files. That information is now available on a single platform in electronic form.

- LIMBS assign priority to the cases such as contempt cases, on their financial implication on the government. Also provides SMS reminders.

➢ **Encouraging Mediation To Settle Disputes**

- India participated in deliberations at the **United Nations Commission on International Trade Law (UNCITRAL)** in **New York** on an important issue concerning resolution of commercial disputes.

- **Commercial disputes are resolved not only through courts and arbitration but also through mediation**. The deliberations considered how these settlement agreements in disputes in international commercial transactions will be implemented by courts in different countries.

- **The adoption of the convention will address a policy gap on outcomes from the mediation process involving cross-border disputes**. With a definitive legal framework recognising and enforcing mediated settlement agreements, businesses will be encouraged to consider mediation in managing and resolving disputes that arise in their commercial transactions.

- **UNCITRAL** has formulated principles on which countries should recognize and enforce mediation agreements arising from cross-border disputes. Once formalised, countries will have a consistent framework for enforcing mediation agreements made in other countries.

➢ **North Eastern Council To Come Under Direct Control Of Home Ministry**

- The council, which is the nodal agency for the economic and social development of the North Eastern region, was till now chaired by the Development of North Eastern Region (**DoNER) Minister.**

- Thus, Home Minister will be the ex-officio chairperson of the Council. The **DoNER Minister** will be the Vice Chairman and all the Governors and Chief Ministers of North Eastern States as Members.

➢ **National Register of Citizens(NRC)**

- The state of Assam **released the final draft** of the National Register of Citizens (NRC), seven months after it released the first draft on 1 January 2018, which included 1.9 crore names out of a total applicant pool of 3.29 crore.

- The 2ⁿᵈ list, however, left out 40.07 lakh people wherein 2.89 crore people were found eligible out of 3.29 crore applicants .

- The Supreme Court has issued a notice to the centre and the Election Commission of India on a plea seeking that the **National Register of Citizens (NRC) be updated to include Tripura.**

- The NRC is the **list of Indian citizens of Assam**. It was prepared in 1951, following the first wave of immigrants from the then East Pakistan. Illegal immigration was a big issue even in those days in Assam. It was prepared under the purview of the **Foreigners Act of 1946**.
- The objective behind updating and publishing the 1951 NRC is to compile a list of the names of genuine Indian citizens residing in Assam and, in the process, detect foreigners who may have illegally entered the state after *March 24, 1971*– the eve of the Bangladesh War.
- In 2015, the **Supreme Court** directed the government to update the NRC in a time-bound manner under the **Citizenship (Registration of Citizens and Issue of National Identity Cards) Rules 2003.**

➢ **The No Confidence Motion**

- **After 15 years,** Lok Sabha has debated a No Confidence Motion (NCM).

- In a parliamentary democracy, a government can be in power only if it commands a majority in the directly elected House. **Article 75(3)** of our Constitution embodies this rule by specifying that the Council of Ministers are collectively responsible to Lok Sabha.

- The rules of Lok Sabha provide a mechanism for testing this collective responsibility. They allow any Lok Sabha MP, who can garner the support of *50 colleagues*, to introduce a motion of no confidence against the Council of Ministers.

- It was during the **third Lok Sabha** in 1963 that the first one was moved by **Acharya J B Kripalani** against the government headed by Prime Minister Jawaharlal Nehru. The first no-confidence motion that led to the falling of a government was moved by **Y B Chavan** in 1979 against the government of Prime Minister Morarji Desai. This time it was **the 27th NCM** in our Parliamentary history.

➢ **Two Constituency Norm**

- The government has **objected to a plea in Supreme Court to stop candidates from contesting from two different constituencies.**

- **Section 33(7) of the Representation of People Act permits** a candidate to contest any election (Parliamentary, state assembly, biennial council, or byelections) from up to two constituencies, presumably to give greater flexibility to candidates and increase their chances of winning a seat.

- When a candidate contests from two seats, he has to vacate one of the two if he wins both.

The Representation of People Act, 1951 is an act of Parliament of India to provide for **the conduct of elections of the Houses of Parliament and to the House or Houses of the Legislature of each State**, the qualifications and disqualifications for membership of those Houses, the corrupt practices and other offences at or in connection with such elections and the decision of doubts and disputes arising out of or in connection with such elections.

➢ **Supreme Court Quashes NOTA in Rajya Sabha Polls**

• The Supreme Court has recently quashed a June 2014 notification of the Election Commission that had allowed use of the None Of The Above (NOTA) option in Rajya Sabha elections.

• NOTA was **introduced in Lok Sabha polls,** following a 2013 decision of the Supreme Court. The EC extended this to Rajya Sabha polls via a notification in January 2014.

• The Election Commission cannot sanction the use of NOTA in Rajya Sabha elections by way of mere circulars, which have the effect of overriding the provisions of **Article 80(4),** that provides for proportional representation by means of the single transferable vote.

➢ **Lok Sabha Passes Bill To Allow NRIs To Vote By Proxy**

• The Lok Sabha passed a bill to amend the Representation of the People Act to allow non-resident Indians (NRI) to vote in elections through a proxy.

• Proxy voting essentially allows an absentee voter to nominate someone else in his constituency to cast his vote.

• **The Representation of the People (Amendment) Bill, 2017** amends **Section 60** and extend the facility of proxy voting to Indian voters living abroad.

NRI VOTERS & PROXY VOTING

➢ For 66 yrs, India has held that NRIs need to be present physically to cast votes
➢ Former Prime Minister Manmohan Singh 1st promised to change laws & consider other options
➢ On August 3, 2017 even as Cong & other parties opposed, EC, Centre held proxy voting as viable
➢ 2 other options discarded: postal ballot system (for logistical reasons) & e-voting (for technical issues)
➢ On December 18, bill to allow proxy voting introduced in Lok Sabha

➢ As of December 2016, there were more than 1.3 crore NRIs
➢ As of December 2017, only 24,348 of them registered to vote in India
➢ 96% or 23,556 of the 24.3k voters registered are from Kerala
➢ Punjab a far 2nd with 364 NRI voters, followed by Puducherry (137); TN (49) & Delhi (37)
➢ Only 14 in Gujarat, and 15 in Andhra Pradesh, while Chandigarh has 11

13 states, including Karnataka, Northeastern states, Jammu & Kashmir, have zero registrations

— Source: Election Commission of India & Government of India

➢ **By-polls Generate Heat Over EVMs, VVPATs**

• VVPAT machines are used to verify that the vote polled by a voter goes to the correct candidate**.**

• After a voter presses the button on the EVM against the chosen candidate**, the VVPAT prints a slip containing name of the candidate and the election symbol and drops it automatically into a sealed box**. The machines give the chance for the voter to verify their vote**.**

➢ **Composite Water Management Index(CWMI)**

• **NITI Aayog** has come up with an important tool, *CWMI*, to assess and improve the performance of States/ Union Territories in efficient management of water resources.

• CWMI has been developed by *comprising 9 broad sectors with 28 different indicators* covering various aspects of ground water, restoration of water bodies, irrigation, farm practices, drinking water, policy and governance.

• The report ranks **Gujarat as number one** in reference year (2016-17), followed by Madhya Pradesh, Andhra Pradesh, Karnataka and Maharashtra. In North Eastern and Himalayan States, **Tripura** has been adjudged number 1 in 2016-17 followed by Himachal Pradesh, Sikkim and Assam.

• The purpose of releasing these ranks is **to push the states to increase their supply of drinking water for all rural and urban areas** and contain the contamination of this water.

INDIAN ECONOMY

➢ **India Becomes World's Sixth Largest Economy**

• India has become the world's sixth-biggest economy**, pushing France into seventh place**, according to updated World Bank figures for 2017.

• India's gross domestic product (GDP) amounted to $2.597 trillion at the end of last year, against $2.582 trillion for France

• The **US is the world's top economy, followed by China, Japan and Germany**

➢ **World Bank Ease of Doing Business Report ,2018**

• India jumped **23 ranks** in the World Bank's Ease of Doing Business Index 2019 to **77 (for 2018).** In the 2018 report, the country was ranked 100 (for 2017).

• The report ranks 190 economies based on how easy it is to do business there, taking into account **trading regulations**, **property rights, contract enforcement, investment laws, the availability of credit** and a number of other factors.

• India became the **top ranked country in South Asia** for the first time and **third among the BRICS.**

• The **biggest gain was in construction permit** where India climbed 129 ranks to 52nd place on the back of targeted government effort to remove hurdles.

➢ **Ease Of Doing Business Ranking**

• **The DIPP and World Bank** has **released the latest Ease of doing Business** ranking in which *Andhra Pradesh* has topped the list, followed by Telangana and Haryana. Andhra Pradesh had scored the top spot in the previous year too.

• The rankings have been drawn up on the basis of performance across *372 parameters*. These cover a gamut of regulatory practices, such as factory inspections, environmental regulations, labour laws, construction permits, land availability and single-window clearances.

• DIPP, in collaboration with the World Bank conducts this annual reform exercise for all states and Union territories under the *Business Reform Action Plan (BRAP).*

BANKING AND FINANCE

➢ **Section 7 of the RBI Act**.

• In an unprecedented move, the government has reportedly invoked **Section 7 of the RBI Act.**

• According to Section 7 of the RBI Act, the *central government is empowered to issue directions* it considers necessary for public interest to the central bank from time to time, after consultation with the RBI Governor.

• *The sub-section under Section 7 further reads*, "Subject to any such directions, the general superintendence and direction of the affairs and business of the Bank shall be entrusted to a _Central Board of Directors_ which may exercise all powers and do all acts and things which may be exercised or done by the Bank."

• This section has never been used in till now

➢ **RBI to Seek More Power**

• The public-sector banks are not banking companies under the **definition of *Sec 5(C) of the Banking Regulation Act* and are statutory corporations** to which the concerned section doesn't apply. This apparently is a great constraint for the RBI.

• **RBI also does not have the power to appoint or remove CMDs or Directors**, give a licence or remove it, impose conditions, call meetings of bank directors or depute its officers for board meetings or appoint observers.

➢ **Enhanced Access and Service Excellence (EASE)**

• The gross non-performing assets or bad loans of state-run banks stood at around Rs 7.77 lakh crore at December-end.

• The government has announced its *EASE reform* agenda along with a Rs 2.1 lakh crore capital infusion plan of which Rs 80,000 crore have already been disbursed.

➢ **RBI To Set Up Public Credit Registry On All Borrowers**

• RBI has decided to set up **Public Credit Registry (PCR) on all borrowers**. The PCR will be the *single point of mandatory reporting* for all material events for each loan notwithstanding any threshold in the loan amount or type of borrower.

• The PCR will also include data from entities like market regulator SEBI, the Corporate Affairs Ministry and the Insolvency and Bankruptcy Board of India to enable banks and financial institutions to get a **360-degree profile of existing and prospective borrowers on a real-time basis.**

• The RBI considered the recommendations of *YM Deosthalee* headed High Level Task Force and decided to set up a PCR.

• A credit repository will help banks distinguish between a bad and a good borrower and accordingly offer attractive interest rates to good borrowers and higher interest rates to bad borrower.

• A PCR can potentially **help banks in credit assessment** and **pricing of credit** as well as in making risk-based, dynamic and counter-cyclical provisioning.

• The PCR can also help the RBI in understanding if transmission of monetary policy is working, and if not, where are the bottlenecks.

➢ **Prompt Corrective Action For Banks**

• The Finance Minister has recently requested the Reserve Bank of India (RBI) to review and relax the triggers in invoking *Prompt Corrective Action (PCA)* for banks that are in a difficult situation.

• Two banks, where PCA was invoked after the revised guidelines were issued, were ***IDBI Bank and UCO Bank.***

- To ensure that banks don't go bust, RBI has put in place some **trigger points** to assess, monitor, control, and take corrective actions on banks which are weak and troubled. The process or mechanism under which such actions are taken is known as Prompt Corrective Action, or PCA.

- RBI has set trigger points on the basis of **CRAR** (a metric to measure balance sheet strength), **NPA**(Non-Performing Assets) and **ROA**(return on Assets). Based on each trigger point the banks have to follow a mandatory action plan. There are *three risk thresholds*.

➢ **UCBs Allowed To Be Converted Into Small Finance Banks**

- The RBI said it will allow **urban cooperative banks to voluntarily convert themselves into small finance banks**, a move aimed at bringing these entities into mainstream banking**.**

- **UCBs were set up as small banks offering banking services to people of small means belonging to the lower and middle classes.**

- UCBs operate under a dual control regime with supervision of both the RBI and the State Governments**. By turning into SFBs, they will be regulated only by the RBI.**

➢ **LIC Buys IDBI Bank**

- **The Life Insurance Corporation of India (LIC**) has obtained the approval of Insurance Regulatory and Development Authority of India (IRDAI) to buy *upto 51 %* in debt-ridden **IDBI Bank** from the current 10.82%.

- **Unlike in the other public sector banks, the government can spare its stake in IDBI Bank to below 50% because this bank is not governed by the *Bank Nationalization Act, 1969*.** The central government owned 85.96% equity in IDBI Bank.

➢ **Inter Creditor Agreement**

A group of banks, including public sector, private sector and foreign banks, **signed an inter-creditor agreement (ICA)** to push for the speedy resolution of non-performing loans on their balance sheets.

What is ICA and how will it work?

The pact: ICA is an agreement among banks that have dues from a borrower in stress. The pact mandates the lead bank to formulate a resolution plan that will be executed in a time-bound manner

Applicability: All corporate loans above ₹50 crore

Binding condition: If 66%, or two-third, of the lenders in terms of aggregate exposure approve, then the pact is binding on all the lenders

Exit option: Dissenting Lenders will have an exit route, either selling their exposure at a discount or buying exposure of the other lenders at a premium

Who is in? 24 banks, including SBI, Bank of India and Corporation Bank have already signed up. A majority of the lenders are expected to follow suit by the end of the week. Some NBFCs may also come on board

Target date: The framework is expected to be operational by the end of this month

➢ **Banks and NBFC Can Jointly Originate Priority Sector Loans**

- The move is aimed at leveraging the reach of NBFCs to help banks meet their priority sector lending targets, leveraging the reach of NBFCs.

- **Priority sector lending includes loans to sectors such as agriculture, micro enterprises, social infrastructure, education and renewable energy**.

- Under the new guidelines, **NBFCs will take minimum 20% of the credit risk** by way of direct exposure, with the balance being taken by banks.

- **The bank and NBFC shall open an escrow type common account** for pooling of respective loans contributions for disbursement and loan repayments from borrowers, the guidelines state.

- Both the lenders will follow independent provisioning requirements and create a framework for day to day monitoring and recovery of the loan.

- The new guidelines benefit both banks and NBFCs. But **this benefit is denied to deposit taking NBFCs like Shriram, Sundaram.**

➢ **RBI's Internal Ombudsman Scheme, 2018**

- The scheme was introduced to strengthen the internal grievance of banks and to ensure that the complaints of the customers are redressed at the level of the bank itself by an authority placed at the highest level of bank's grievance redressal mechanism so as to minimize the need for the customers to approach other fora for redressal.

- The banking regulator has asked **all commercial banks having 10 or more banking outlets** to have an independent internal ombudsman to review customer complaints that are either partly or fully rejected by the banks.

- The central bank has, however, **excluded regional rural banks (RRBs)** from appointing ombudsman.

➢ **Bank of Baroda, Vijaya Bank & Dena Bank To Be Merged**

- The government has proposed the merger of three banks *i.e.* **Bank of Baroda, Vijaya Bank and Dena Bank aimed at creating the country's third biggest lender**.

- Previously, govt had pushed through consolidation of **State Bank of India group, with SBI absorbing 5 associate banks and Bharatiya Mahila Bank**. The process was completed last year.

➢ **Post Payment Bank**

- Prime Minister recently launched the **India Post Payments Bank (IPPB),** a financial service provider that will operate under the country's postal department.

- The government-owned payments bank will be able to accept **deposits of up to Rs. 1 lakh** from customers but **cannot lend these funds to advance risky loans** at higher interest rates.

- It is also hoped that the payments bank idea will help reinvigorate the postal system, which has a wide network of branches across India. All the 1,55,000 post offices in the country are expected to be linked to the IPPB system by December 2018.

➢ **Project Sashakt**

The government has announced a **bank-led five pronged comprehensive plan** i.e. **Sashakt** for the resolution of stressed assets with public-sector banks (PSBs) including creation of one or more widely held asset management companies (AMC) for loans **above Rs. 500 crores**.

Project Sashakt

Mehta Panel Recommendations	**Bank-Led Resolution Approach (BLRA)**	**SME Resolution approach for loans below ₹50 crore**
Five-pronged approach for resolution of loans	for loans of ₹50-500 crore	Banks to develop templated resolution approaches
PSBs to take lead in setting up asset management company for loans above ₹500 cr	Lead bank to implement resolution plan in 180 days	Set up empowered SME steering committee
AIF to raise funds from institutional investors	Independent screening committee to validate due process in 30 days	

➢ **NBFCs to Meet RBI on IndAS Implementation**

• **RBI has deferred the implementation of IndAS** for banks by a year, **while it is applicable for NBFCs from April 1, 2018**. NBFCs will have to compute their first quarter result this month and it is expected to have an impact on capital due to enhanced provisioning.

• **IndAS** is a global accounting practice that NBFCs are mandated to adopt, which may lead to initial credit losses. The **practice is at par with the International Financial Reporting Standard (IFRS) 9.**

➢ **RBI Cracks Down On Bitcoin; Bans Banks From Dealing With Cryptocurrency Trader**

• The RBI released a statement directing all regulated entities, including banks, to stop dealing with individuals and businesses dabbling in virtual currencies. This amounts to **a ban on banks in dealing with companies or individuals that trade in cryptocurrencies.**

• Virtual Currencies (VCs), also variously referred to as **cryptocurrencies** and crypto assets, is a type of digital currency that uses cryptography for security and anti-counterfeiting measures.

• The control of each cryptocurrency works through distributed ledger technology called **blockchain**. Examples include **Bitcoin, Ethereum, Ripple etc.**

• **Virtual Currencies (VCs) don't have any intrinsic value** and are **not backed by any kind of assets.** The price of **Bitcoin and other VCs** therefore is entirely a matter of mere speculation resulting in spurt and volatility in their prices.

➢ **Jan Dhan Yojana Extended Indefinitely**

• The Union government has transformed the Pradhan Mantri Jan Dhan Yojana (PMJDY), launched in 2014, into a **open-ended scheme** by approving its **indefinite continuation** to ensure all citizens have the same access to banking and financial instruments.

• In its new avatar, the Jan Dhan Yojana will now have a **relaxed age limit of 18-65 years** for availing overdraft facility as against the earlier 60 years upper limit.

• Under the **expanded coverage from 'every household to every adult'**, the new accidental insurance cover for new RuPay cardholders stands at Rs.2 lakh instead of 1 lakh, for PMJDY accounts opened after August 28, 2018.

➢ **Higher Threshold For Tax Appeals**

• The government has decided to hike the monetary threshold for appeals in tax matters to bring down the amount under litigation by *Rs 5600 crore.*

• As per Economic Survey 2017-18, the tax departments have gone in for contesting against in several tax disputes but with a low success rate which is *below 30 %.*

• The government has increased the threshold for the tax department to file appeal before Income Tax Appellate Tribunal/Customs, Excise and Service Tax Appellate Tribunal (ITAT/CESTAT) to *Rs 20 lakh from Rs 10 lakh earlier*, for high courts to *Rs 50 lakh from Rs 20 lakh* and as for the Supreme Court to *Rs 1 crore from Rs 25 lakh*.

➢ **Partial Credit Enhancement**

- The Reserve Bank of India (RBI) has allowed banks to provide **partial credit enhancement (PCE) to bonds issued by systemically important non-deposit taking non-banking financial companies (NBFCs) registered with the RBI** and **housing finance companies (HFCs**) registered with the National Housing Bank.

- The move is aimed at enhancing the credit rating of the bonds and enabling these NBFCs to access funds from the bond market on better terms.

➢ **UPI 2.0**

- The **National Payments Corporation of India (NPCI**) launched the second version of UPI *i.e.* the UPI 2.0. To start with, **11 banks** have partnered to offer the second version and five new features have been introduced in the **second version of UPI.**

- **Here are key features of UPI 2.0**

  ✓ **UPI 2.0** will serve as an additional digital channel to access the overdraft account.

  ✓ **UPI mandate** could be used in a scenario where money is to be transferred later by providing commitment at present

  ✓ **Invoice in the inbox** feature is designed for customers to check the invoice sent by merchant prior to making payment

  ✓ **Signed intent and QR** feature is designed for customers to check the authenticity of merchants while scanning QR or quick response code.

  ✓ The **per transaction limit** has been doubled from **Rs. 1 lakh to Rs. 2 lakh** in UPI 2.0.

- **UPI was launched on 11 April 2016** and in the last two years the platform has emerged as a popular choice among users for sending and receiving money.

- **National Payments Corporation of India (NPCI)** is the umbrella organization for all retail payments in the country. It also manages the UPI platform that facilitates instant fund transfer between two bank accounts on a mobile platform, without requiring details of the beneficiary's bank account.

➢ **Ease of Doing Business Grand Challenge**

- The government has launched Ease of Doing Business Grand Challenge on resolving seven identified Ease of Doing Business problems **with use of cutting edge technologies.**

- The objective of this challenge is to tap potential of **young Indians, startups and other private enterprises to provide solutions to complex problems using current technology**.

- This challenge is aimed at attracting innovative ideas on **artificial intelligence (AI), Internet of Things (IoT), big data analytics, blockchain and other cutting edge technology to reform government processes.** The platform for this grand challenge will be on *Start Up India portal*.

➢ **PAiSA – Portal For Affordable Credit & Interest Subvention**

- It is a centralized electronic platform for processing interest subvention on bank loans to beneficiaries under **Deendayal Antyodaya Yojana – National Urban Livelihoods Mission (DAY-NULM).**

- It is designed and developed by **Allahabad Bank (Nodal bank)**.

- Another effort by the government to **connect directly with the beneficiaries** for ensuring **greater transparency and efficiency** in delivery of services.

- DBT of subvention on monthly basis under DAY-NULM will give the necessary **financial support to small entrepreneurs** in a timely manner.

- All 35 States/UTs & all scheduled commercial banks, RRBs and Cooperative Banks are expected to be on board the PAiSA portal the year end.

➤ **Seychelles Launched World's First Sovereign Blue Bond**

- The Republic of Seychelles has launched the world's first Sovereign Blue Bond, a financial instrument designed **to support sustainable marine and fisheries projects.**

- The bond **raised USD 15 million from international investors**. The bond demonstrates the potential for countries to harness capital markets for financing the sustainable use of marine resources.

- The Blue Bond is a part of an initiative that combines public and private investment to mobilize resources for empowering local communities and businesses.

- The Seychelles blue bond is partially **guaranteed by** a USD 5 million guarantee from the **World Bank (IBRD)** and is further supported by a USD 5 million concessional loan from the **Global Environment Facility (GEF)** which will partially cover interest payments for the bond.

➤ **FSDC Reconstituted To Include More Members**

- **The FSDC was set up to create an institutional structure and mechanism for financial stability, financial sector development and inter-regulatory coordination**. It is charged with financial literacy, financial inclusion and macro prudential supervision of the economy including the functioning of large financial conglomerates.

- The Council, *headed by the Finance Minister*, will now include the Minister Of State responsible for the Department of Economic Affairs (DEA), the Secretary of Department of Electronics and Information Technology. The reconstituted FSDC will also include the *Chairperson of the Insolvency and Bankruptcy Board of India (IBBI)* and the Revenue Secretary.

- Other members of the FSDC, which was constituted in December 2010, are the Governor of the Reserve Bank of India, Chief of Securities and Exchange Board of India, Finance Secretary of Department of Economic Affairs, Secretary-Financial Services, Chief Economic Adviser and Chairpersons of the IRDA and PFRDA.

➤**Government Savings Promotion Act**

- The Union Cabinet has decided to bring a law to make life easier for small savers **especially those who save for girl children and senior citizens** and to further strengthen the objective of minimum government, maximum governance.
- It proposed the Government Savings Promotion Act **by merging the *Public Provident Fund (PPF) Act of 1968, the Government Savings Banks Act of 1873*, and the *Government Savings Certificates Act of 1959.***
- **It has provisons like Deposits by Minors, operation of account in the name of disabled person, grievance redressal system, etc.**

➢ **Benami Transactions Informants Reward Scheme**

- Any specific information **on benami transactions or property in the country will be worth a reward of Rs 1crore** from the Central Board of Direct Taxes **(CBDT).** The reward for giving **any inputs on black money** stashed abroad could fetch up to **Rs 5 crore.**

- Foreigners will also be eligible for such reward.

- **The Benami Transactions (Prohibition) Amendment Bill, 2015** was introduced in Lok Sabha on May 13, 2015. The **Bill seeks to amend the Benami Transactions Act, 1988.** The Act prohibits benami transactions and provides for confiscating benami properties.

- A **benami transaction** is **one where the property is held in one person's name, but the funds for acquisition have been provided by another person**, for whose benefit the property is held. Therefore, the property is not held in the name of the real owner, but in somebody else's name

➢ **New Method To Solve PSU Disputes**

- A **new two-tier mechanism** will be put in place of the existing permanent machinery of arbitration (PMA) mechanism to resolve commercial disputes (excluding disputes concerning railways, IT, custom and excise departments) between CPSEs inter se and CPSEs and government departments outside the courts of law.

- At the first level, such commercial disputes will be referred to a **Committee comprising Secretaries of the Ministries or Departments to which the disputing parties belong,** along with the **Legal Affairs Secretary.**

- At the second level, in case the dispute remains unresolved by the Committee, it will be referred to the **Cabinet Secretary** whose decision will be final and binding on all concerned.

➢ **Global Real Estate Transparency Index (GRETI) 2018 by Jones Lang LaSalle Inc. (JLL).**

- India has moved up just one spot in the GRETI from **36 in 2016 to 35 in 2018**, despite the implementation of the Real Estate (Regulation And Development) Act or RERA**.**

- The index measures transparency based on factors such as data availability, authenticity and accuracy; governance of public agencies as well as stakeholders of the realty sector; transaction processes and costs associated with those; and the regulatory and legal environment.

➢ **Centre To Enact Law Against Fugitives**

- Parliament has passed the Fugitive Economic Offenders Bill, 2018, which proposes the confiscation of assets of those who flee the country to evade prosecution or refuse to return in **cases involving more than 100 crore.**

- The draft bill defines a fugitive economic offender as any individual against whom an arrest warrant has been issued and who has either left the country or refuses to come back to face prosecution.

➢ **New GST Appellate Tribunal**

- The GST Council has approved creation of the tribunal with a national bench in **Delhi** and three regional benches in **Chennai, Kolkata and Mumbai**

- A **Goods and Services Tax Appellate Tribunal (GSTAT)** will come into effect soon, providing a higher judicial forum for businesses to redress disputes under the new tax framework. The tribunal is the second level of appeal where pleas can be filed against orders from appellate or revisional authorities. The new body replaces the **Central Excise and Services Tax Appellate Tribunal.**

AGRICULTURE

➢ **Zero-budget Natural Farming**

- According to NITI Aayog, most states have agreed to adopt ZBNF under two existing schemes: *Paramparagat Krishi Yojana* and *Rashtriya Krishi Vikas Yojana*

- States like *Karnataka, Andhra Pradesh and Himachal Pradesh* have already initiated zero-budget natural farming by involving more than five lakh farmers.

- **Under ZBNF, a** set of natural farming methods (a chemical-free method) are used where the cost of growing and harvesting crops is almost zero. Natural farming is *"do nothing farming"* based on no-till, no chemical use in farming along with the dispersal of clay seed balls to propagate plants .

- The father of ZBNF and Padma Shri Awardee, **Shri Subhash Palekar** has provided four **important non-negotiable guidelines**:
  - o **Bijamrita (Seed Treatment** using local cowdung and cow urine)
  - o **Jiwamrita** (applying inoculation made of local cowdung and cow urine without any fertilizers and pesticides)
  - o **Mulching** (activities to ensure favorable microclimate in the soil)
  - o **Waaphasa** (soil aeration).

➢ **Centre Unveils Model Contract Farming Law**

- The Agriculture Ministry has released the **Model Contract Farming Act 2018**, which lays emphasis on protecting the interests of farmers from price risks and encourage food processing companies to invest more in infrastructure and farming technology.

- The final Model Act has **been named as** *State/UT Agricultural Produce and Livestock Contract Farming and Services (Promotion and Facilitation) Act, 2018.*

Key Features of Model Contract Farming Act:

Ensure buying of entire pre-agreed quantity of contract farming producer as per contract	**To guide** the contracting parties to fix pre-agreed price	**To decide** sale-purchase price in case of violent movement (upswing or downswing) of market price vis-a-vis pre-agreed price as a win-win framework	
Provided contract farming facilitation group at village level to take quick and need based decision	**Contract farming** to remain outside the ambit of APMC Act	**Catering** to a dispute settlement mechanism at the lowest level possible for quick disposal of disputes	**Contract Farming** (Development & Promotion) Authority to carry out the assigned mandates

CONTRACT FARMING

- System of farming in which agro-processing/exporting or **trading units enter into deals with farmers** to purchase their entire produce at a pre-agreed price
- Functions as tool to **minimise price risk** for farmers
- Aims to **reduce post-harvest losses**
- Private firms provide technology, capital support to contracted farmers
- Helps in increasing production and produce can be of desired quality
- **Firms remain assured of the desired quality and quantity** of raw farm produce at the time of sowing of the crop itself
- **Model Act disallows land title, rights, ownership** or **possession** to be **transferred** or alienated
- **Prohibits contract farming sponsor** from raising permanent structure on farmers' land

➢ **Operation Greens**

- The government is likely to soon launch a Rs 500 crore programme, announced in this year's budget, that aims to end distress sales by farmers of **tomato, onion and potato (TOP) crops.**

- The programme intends to enhance farmer's income, create integrated supply chains, and reduce price volatility. **The focus will be to intervene in** *top 10 major producing clusters* **for each crop.**

- This will lead to enhancement in the incomes of tomato, onion and potato farmers, capacity building of Farmers Producers Organisations, reduction in post-harvest losses, creation of processing infrastructure, provision of agri-logistics for supply chain and reduction in price volatility of TOP for consumers.

➢ **Pradhan Mantri Annadata Aay Sanrakshan Abhiyan**

- Under the PM-AASHA, states will be allowed to choose from three existing schemes **Price Support Scheme (PSS),** newly designed **Price Deficiency Payment Scheme (PDPS),** and the new pilot **Private Procurement Stockist Scheme (PPSS)** to undertake procurement when prices of commodities fall below MSP level.

- The existing Price Support Scheme (PSS) will continue for pulses and copra, with Central agencies including the NAFED and the Food Corporation of India physically procuring the produce whenever the market rates fall below MSP, up to a **maximum limit of 25%** of the total harvest.

- The Price Deficiency Payment Scheme is modeled on the **Bhavantar experiment in Madhya Pradesh** last year, where there is no physical procurement at all. Instead, farmers will sell their produce in the market, and the government will directly pay them the difference between the MSP and the average market rate.

➢ **Soil Health Card Scheme**

- The Soil Health Card (SHC) scheme, that was introduced in 2015, intended that every farmer receive a health card for their soils that tells them the status of the nutrients in it and as a result, guides them about the fertilizers they should apply to maximize their yields.

- The **soil is analyzed** for **12 soil chemical parameters** and thereafter the soil is recommended for fertilizer dosages and the same is printed on the SHCs, which were given to farmers.

GUIDE FOR FARMERS
- Card to carry crop-wise recommendations of nutrients\fertilizers for different soil types
- Details will be displayed on the basis of soil tests
- Help farmers in judicious use of fertilizers, organic manures and water
- Cards to be issued for all 14 crore farmland holdings in three years
- Three crore cards to be given in 2015; 5.5 crore in 2016 and 5.5 crore in 2017
- Soil samples for testing to be drawn in a grid of
- 2.5 hectare in irrigated areas
- Soil samples for testing to be drawn in a grid of 10 hectare in rain-fed areas
- 248 lakh samples to be tested to generate 14 crore 'soil health cards'

➢ **Soura Jalanidhi Scheme**

- Odisha Government has launched Soura Jalnidhi scheme to encourage use of solar energy in irrigation by farmers.

- The beneficiary of this scheme will be farmers who have valid farmer identity cards and have minimum 0.5 acres of agricultural land.

- Under this scheme, farmers will be given 90% subsidy and 5,000 solar pumps. This will provide irrigation benefits in 2,500 acres of the state.

- In the first phase, this scheme will be available in those areas where electricity is not available for running the pump set.

INDUSTRY

➤ **Startup India's Academia Alliance Programme**

- The Ministry of Commerce and Industry has announced the Startup Academia Alliance programme, to fulfill the Government's mission to promote the spirit of entrepreneurship in the country.

- The first phase of Startup Academia Alliance was kickstarted through partnering with Regional Centre for Biotechnology, The Energy and Resources Institute (TERI), Council on Energy, Environment and Water, and TERI School of Advanced Studies.

- Renowned scholars from these institutes, in fields such as renewable energy, biotechnology, healthcare and life sciences were taken on board to provide mentorship and guidance to startups working in relevant arenas.

- Startup India is an **initiative of the government organized by The Department of Industrial Policy and Promotion (DIPP).**

➤ **Yuva Sahakar-Cooperative Enterprise Support and Innovation Scheme**

- To cater to the needs and aspirations of the youth, the National Cooperative Development Corporation (NCDC) has come up with a youth-friendly scheme *'Sahakar-Cooperative Enterprise Support and Innovation Scheme Yuva"* for attracting them to cooperative business ventures.

- The scheme would encourage cooperatives to venture into new and innovative areas.

- NCDC has created **a dedicated fund** with liberal features enabling youth to avail the scheme. The scheme will be linked to Rs 1000 crore *'Cooperative Start-up and Innovation Fund (CSIF)'* created by the NCDC. It would have more incentives for cooperatives of North Eastern region, Aspirational Districts and cooperatives with women or SC or ST or PwD members.

- **The funding for the project** will be up to 80% of the project cost for these special categories as against 70% for others. The scheme envisages 2% less than the applicable rate of interest on term loan for the project cost up to Rs 3 crore including 2 years moratorium on payment of principal. All types of cooperatives in operation for at least one year are eligible.

➤ **Loans for MSME in 59 minutes**

- PM Modi announced **12 measures to boost** the Micro, Small and Medium Enterprises **(MSME) sector**, including a portal that would enable the units to get a **loan in just 59 minutes** and **interest subvention of 2%.**

- The 12 initiative are :-

  1. **Loans for MSMEs up to Rs 1 crore** can be granted in 59 minutes, which can also be availed through goods and services tax portal.
  2. **A 2% interest subvention** for all GST registered MSMEs, on fresh or incremental loans. For exporters who receive loans in the pre-shipment and post-shipment period, there will be an increase in interest rebate from 3% to 5%.
  3. All companies with a turnover more than Rs. 500 crore, must now compulsorily be brought on the **Trade Receivables e-Discounting System (TReDS)**.

4. Public sector companies have now been asked to compulsorily **procure 25%, instead of 20% of their total purchases, from MSMEs**.

5. Out of the 25% procurement mandated from MSMEs, **3% must now be reserved for women entrepreneurs**.

6. All public sector undertakings of the Union Government must now **compulsorily be a part of GeM**. He said they should also get all their vendors registered on GeM.

7. **20 hubs will be formed across the country**, and 100 spokes in the form of tool rooms will be established.

8. **Clusters will be formed of pharma MSMEs**. 70% cost of establishing these clusters will be borne by the Union Government.

9. **The return under 8 labour laws and 10 Union regulations** must now be filed only once a year.

10. Now the establishments to be visited by an Inspector will be decided through a **computerised random allotment**.

11. Under air pollution and water pollution laws, now both these have been **merged as a single consent**. The return will be accepted through self-certification.

12. **An Ordinance has been brought, under which, for minor violations under the Companies Act, the entrepreneur will no longer have to approach the Courts**, but can correct them through simple procedures.

New Definition of MSME Units

The Union Cabinet has approved change in the basis of classifying Micro, Small and Medium enterprises **from 'investment in plant & machinery/equipment' to 'annual turnover'**.

According to the government's new definition,

- A **micro enterprise** will be defined as a unit where the annual turnover does not exceed **five crore** rupees;

- A **small enterprise** will be defined as a unit where the annual turnover is **more than five crore rupees but does not exceed Rs 75 crore;**

- A **medium enterprise** will be defined as a unit where the annual turnover is **more than seventy five crore rupees but does not exceed Rs 250 crore**.

- Additionally, the Central Government may, by notification, vary turnover limits, which shall not exceed thrice the limits specified in Section 7 of the MSMED Act.

This will encourage ease of doing business, make the norms of classification growth oriented and align them to the new tax regime revolving around GST (Goods & Services Tax)

➤ **Companies Amendment (Ordinance), 2018**

The President has given his assent to the *Companies Amendment (Ordinance), 2018*. The Ordinance is promulgated to review offences under the Companies Act, 2013. Key amendments are:-

- *Shifting of the jurisdiction of 16 types of corporate offences* from the special courts to in-house adjudication, which is expected to reduce the case load of Special Courts by over 60%, thereby enabling them to concentrate on serious corporate offences.

- *The penalty has been reduced to half* for small companies and one-person companies of that applicable to normal companies.

- *Instituting a transparent and technology driven in-house adjudication mechanism* on an online platform and publication of the orders on the website.

- *Strengthening in-house adjudication mechanism* by necessitating a concomitant order for making good the default at the time of levying penalty.

- *Declogging the NCLT* by enlarging the pecuniary jurisdiction of Regional Director, vesting in the Central Government the power to approve the alteration in the financial year of a company and vesting the Central Government the power to approve cases of conversion of public companies into private companies.

➢ **Disinvestment of Dredging Corporation of India**

- Cabinet Committee on Economic Affairs (CCEA) has approved strategic disinvestment of 100% Government of India's shares in **Dredging Corporation of India Limited (DCIL)** to consortium of four ports. Presently, Central Government holds 73.44% shares in DCIL.

- The consortium of four ports consists of **Vishakhapatnam Port Trust** (Andhra Pradesh), **Paradeep Port Trust** (Odisha), **Jawahar Lal Nehru Port Trust** (Maharashtra) and **Kandla Port Trust** (Gujarat).

- Strategic sale of DCIL will further facilitate linkage of dredging activities with ports, keeping in view the role of DCIL in expansion of dredging activity in the country as well as potential scope for diversification of ports into third party dredging.

ENERGY AND INFRASTRUCTURE

➢ **Government Amends Definition Of Hydrocarbon To Include Shale**

- **Union Ministry of Petroleum and Natural Gas has amended Petroleum and Natural Gas Rules 1959** to **include shale** in definition of petroleum.

- The updated definition of petroleum means naturally occurring hydrocarbons, whether in form of natural gas or in liquid, viscous or solid form, or mixture thereof, occurring in association with petroleum or coal or shale but **does not include coal, lignite, and helium**.

> **Shale gas is natural gas** formed from being trapped within shale formations. It is unconventional source of methane, like coal-bed gas (in coal seams) and tight gas (trapped in rock formations). It is colourless, odourless gas, lighter than air. It is cheaper than natural gas, releases 50% less CO_2 hence better source for generating electricity. It also provides feedstock for petrochemicals industry, which is turned into fertilizer, plastics and other useful stuff. **In India, potential shale gas sites are Cambay, Gondwana, Krishna-Godawari and Cauvery Basins.**

➢ **City Gas Distribution (CGD) Projects**

- Prime Minister Narendra Modi will lay the foundation stone for City Gas Distribution (CGD) projects across **129 districts to boost availability of gas supply** for half of the country's population in 26 States and Union Territories.

- The projects, recently awarded by the **Petroleum and Natural Gas Regulatory Board (PNGRB),** would cover **65 Geographical Areas (GAs)** under the ninth round of bidding.

- Development of CGD networks has been focused to increase the availability of cleaner cooking fuel (i.e. PNG) and transportation fuel (i.e. CNG) to the citizens of the country. The expansion of CGD

network will also benefit to industrial and commercial units by ensuring the uninterrupted supply of natural gas.

➢ **Strategic Petroleum Reserve**

- The Union Cabinet has approved the filling of **Padur Strategic Petroleum Reserves** (SPR) in Karnataka by overseas National Oil Companies (NOCs).

- The filling of the SPR will be under PPP model and is being undertaken to reduce budgetary support of Union Government. The SPR facility at Padur is **underground rock cavern with total capacit**y of **2.5 million metric tonnes (MMT)** having four compartments of 0.625 MMT each.

- India has built 5.33 million tons of underground reserves in three locations, including Padur, under an earlier phase that can meet 9.5 days of the country's oil needs. The government purchased crude to fill the caverns in **Visakhapatnam** in Andhra Pradesh and half of another facility in **Mangalore** in Karnataka, while leasing out the other half to **Abu Dhabi National Oil Co.**

Strategic Petroleum Reserve (SPR) Programme

- To ensure energy security, the Government of India had decided to **set up 5 million metric tons (MMT) of strategic crude oil storages at three locations** namely, **Visakhapatnam, Mangalore and Padur (near Udupi).** These strategic storages would be in addition to the existing storages of crude oil and petroleum products with the oil companies and would serve as a cushion during any external supply disruptions.

- In the 2017-18 budget, it was announced that two more such caverns will be set up **Chandikhole** in Odisha and **Bikaner** in Rajasthan as part of the second phase.

- The construction of the Strategic Crude Oil Storage facilities is being managed by **Indian Strategic Petroleum Reserves Limited (ISPRL),** a Special Purpose Vehicle, which is a wholly owned subsidiary of **Oil Industry Development Board (OIDB)** under the Ministry of Petroleum & Natural Gas.

- **To address energy insecurity, the Atal Bihari Vajpayee government mooted the concept of strategic petroleum reserves in 1998**. Today, with India consuming upwards of four million barrels of crude every day (January 2015 figures), the case for creating such reserves grows stronger.

➢ **MOVE: India's First Global Mobility Summit 2018**

- Niti Aayog organised **MOVE: India's first ever Global Mobility Summit** in New Delhi. The Summit brought together stakeholders from across the sectors to deliberate on creating a public interest framework to revolutionize transport.

- During the Summit 'MOVE', NITI Aayog released a report titled **'Transforming India's Mobility: A Perspective'** which suggests a holistic framework for a public transport to answer the twin problems of pollution and congestion.

➢ **Mobilise Your City Programme**

- **India and France** have signed an implementation agreement on "Mobilise Your City" (MYC).

- MYC is an international initiative in the field of **Sustainable urban transport to contribute to the –**
    - ✓ International climate process and

- ✓ UN's Agenda 2030, esp. **Sustainable Development Goal (SDG) 11: Make cities inclusive, safe, resilient and sustainable.**

- **It was launched at 21st Conference of Parties (COP21) meeting in December, 2015.**

- It is a multi-donor action, jointly co-financed by the **European Commission's Directorate-General for International Cooperation and Development (DG DEVCO), French government, and German government.**

- Urban mobility plans at local level will be implemented in three pilot cities viz. **Nagpur, Kochi and Ahmedabad** for reduction of Green House Gas (GHG) emissions related to urban transport.

➤ **India's First Multi-Modal Terminal on Inland Waterways in Varanasi**

- Prime Minister Narendra Modi recently inaugurated **India's first multi-modal terminal on the Ganga river in Varanasi and received the country's first container cargo transported on inland waterways from Kolkata**.

- **This is the first of the four multi-modal terminals being constructed on the National Waterway-1 (river Ganga) as** part of the World Bank-aided Jal Marg Vikas project of the Inland Waterways Authority of India.

➤ **Freight Corridor on East Coast**

- Indian Railways is going to propose the inclusion of India's third freight corridor between **Kharagpur and Vijaywada sections** to be built at a cost of about ₹56,000 crore next year.

- The project, which is also called the **East Coast Corridor**, will be 1,114km in length and is part of the Golden Quadrilateral project of Indian Railways.

- **The Dedicated Freight Corridor Corporation of India Ltd (DFCCIL**) has sent a proposal to Indian Railways to undertake the third dedicated freight corridor project. The project will be funded using equity from Indian Railways and loans.

- Indian Railways, through its arm DFCCIL, is already undertaking the construction of two freight corridors—**Eastern Freight Corridor from Ludhiana to Dankuni (1,856km)** and **Western Freight Corridor from Dadri to Jawaharlal Nehru Port (1,504km)**—being built at a cost of ₹81,000 crore.

➤ **IATA Criticises India's GST On International Air-Tickets**

- **International Air Transport Association (IATA)** asserted that India was taxing international tickets in contravention of the resolutions of the UN body **International Civil Aviation Organisation (ICAO).** IATA is the trade association for the world's airlines, representing some 290 airlines or 82% of total air traffic.

- The Indian government had announced the implementation of the GST from July 1, 2017**. The tax covers airline products and services including tickets, ancillary, change, refund and other products and fees.**

About ICAO: It is a UN specialized agency, established in 1944 to manage the administration and **governance of the Convention on International Civil Aviation (Chicago Convention**). ICAO works with the Convention's 191 Member States and industry groups to reach consensus on international civil aviation **Standards and Recommended Practices (SARPs**) and policies in support of a safe, efficient, secure, economically sustainable and environmentally responsible civil aviation sector. These SARPs and policies are used by ICAO

➢ **Regional Connectivity Scheme**

- Opening the third round of the Regional connectivity scheme (RCS), the Ministry of Civil Aviation has invited proposals for air routes that include tourist destinations. The deadline for submitting applications is November 20.

- Under this scheme, the government has allowed **seaplanes** to operate commercial passenger flights. Included among the 10 destinations that the government proposes to connect through seaplanes are the recently unveiled Statue of Unity at **Sardar Sarovar Dam**, Sabarmati Riverfront in Ahmedabad, **Tehri Dam** in Uttarakhand and **Nagarjuna Sagar** in Telangana.

- Promoting affordability of regional air connectivity is envisioned under RCS by supporting airline operators through: Concessions and Financial (viability gap funding or VGF) support.

➢ **Centre Proposes New Bidding Model For Greenfield Airports**

- The government proposed a new transaction structure for the **bid process for greenfield airports**, switching from a **revenue share model** to a **fixed fee per passenger to be paid to the concessioning authority.**

New model to woo investors

India is giving a major policy push to attract investments in greenfield airport projects to make air travel more accessible and affordable. The proposed projects include airports at:

- **Jewar**, Uttar Pradesh
- **Bhogapuram**, Andhra Pradesh
- **Pune**, Maharashtra

Greenfield projects already under way
- **Navi Mumbai**
- **Kannur**

► A revenue sharing model is likely to be simpler and less prone to disputes over costs
► This model would be a departure from the current norm of developers sharing a part of the profit from the venture

► Minister of state for civil aviation Jayant Sinha said the model would step up building of airport infrastructure and make air travel more accessible and affordable

► India is targeting **one billion** air passengers a year in 15-20 years
► The move is likely to attract more investors and lenders to proposed projects

➢ **Airports Economic Regulatory Authority Amendment Bill 2018**

- The *Airports Economic Regulatory Authority(AERA) of India Act, 2008* was enacted to provide an independent authority to protect the interests of airports, airlines and passengers and to *primarily regulate tariff for aeronautical services* rendered at airports

- Under the Act, the AERA is responsible for determining: (i) the tariff for aeronautical services at different airports every five years, (ii) the development fees of major airports, and (iii) the passengers service fee.

- **The AERA (Amendment) Bill, 2018, proposes** to first amend the definition of "major airport" as any airport with passengers in excess of 3.5 million from the existing 1.5 million.

- The Bill provides that the AERA will not determine: (i) the tariff (ii) tariff structures or (iii) the development fees in certain cases.

➢ **Relaxation In Cabotage Law To Benefit Indian Ports**

- The Shipping Ministry issued a notification lifting restrictions on foreign registered vessels on transportation of loaded or empty containers between Indian ports. Earlier, it was the prerogative of Indian registered shipping lines that paid taxes and were governed by Indian laws

- Moreover, it allows foreign flag ships to carry a range of cargo on local routes and the move to scrap the right of first refusal (ROFR) granted to Indian ships to carry PSU cargo.

- Indian ships are by law mandated to hire only Indian nationals as crew.

Cabotage is a term of maritime law. It **refers to transit of a vessel along the coast of a nation for the purpose of trade from one port to another within the territorial limits of that nation.** Usually the national law of the host nation regulates this coastal trading. The terms coastal trade or coastal trading is more used now instead of cabotage.

HUMAN RESOURCE DEVELOPMENT

➢ **India No Longer A Nation With World's Largest Poor Population**

• US based think tank **Brookings** has published a study titled *'The Start Of A New Poverty Narrative.*

• The report highlighted that with persistent decline in poverty, **India is no longer a nation having largest number of poor people in world.**

• According to the study, **Nigeria has already overtaken India** as the country with the largest number of extreme poor in early 2018, and the *Democratic Republic of the Congo* could soon take over the number 2 spot.

➢ **Task Force For Closing Skills Gap**

• A task force for **Closing the Skills Gap in India** was launched recently in collaboration with the **World Economic Forum** to develop an action plan to address skills gaps in India and make the country's workforce ready for jobs of the future.

• According to the Future of Jobs report, by 2022 over half of workers in India will require re-skilling to meet the talent demands of the future.

• This initiative forms part of the **WEF's Centre for the New Economy and Society**. The **centre aims to build dynamic and inclusive economies and systems in an era of accelerated technological and political change**, providing leaders with a platform to understand and anticipate emerging economic and social trends and to adapt to the rapidly evolving ecosystem.

The **World Economic Forum** (**WEF**) is a Swiss nonprofit foundation, based in Geneva, Switzerland. Recognised in 2015 by the Swiss authorities as an "other international body". Its mission is cited as "committed to improving the state of the world by engaging business, political, academic, and other leaders of society to shape global, regional, and industry agendas". **The forum is best known for its annual meeting at the end of January in Davos**. The meeting brings together some 2,500 top business leaders, international political leaders, economists, celebrities and journalists for up to four days **to discuss the most pressing issues facing the world.**

➢ **Atal Innovation Mission(AIM)**

• **An MoU between NITI Aayog's** Atal Innovation Mission and **Russian Federation's SIRIUS Educational Foundation** has been signed to promote innovative cooperation between students of India and Russia.

• It aims to remove cultural and language barriers between students of Russia and India, share the best practices in the promotion of educational, scientific, innovative achievements, search and develop talented youth of both countries fostering a knowledge driven innovation ecosystem in both the countries.

• AIM is **NITI Aayog's flagship initiative** to promote a culture of innovation and entrepreneurship in India through various initiatives at school, university and industry levels.

- AIM also serves as a platform for promotion of world-class Innovation Hubs, Grand Challenges, Start-up businesses and other self-employment activities in India, leveraging state of the art, advanced and affordable emerging technologies.

➢ **IMPRINT 2**

- **IMPRINT-2** has been approved with a revised strategy under which the initiative will be jointly funded and steered by **MoHRD** and **Department of Science and Technology (DST)**.

- **For the second phase**, the government has sanctioned a fund of Rs. **1000 crore** for research in Science and Technology which will be provided over the course of next two years, i.e. 2018-19 and 2019-20

- The projects that have been approved cover domains such as Energy, Security, Healthcare, Advanced Materials, ICT, and Security/Defence domains

- **IMPRINT** is a first of its kind initiative which is **a Pan-IIT + IISc joint initiative**. It not only addresses development of new engineering education policy but is also instrumental in creating a road map to pursue engineering challenges.
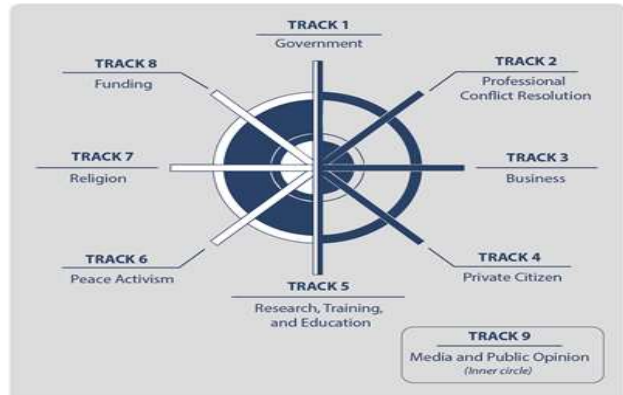
➢ **Atal Bimit Vyakti Kalyan Yojana**

- The Employee's State Insurance Corporation (ESIC) has launched **Atal Bimit Vyakti Kalyan Yojana** for Insured Persons (IP) covered under the Employees' State Insurance Act, 1948.

- This scheme is a relief payable in cash directly to the bank account in case of unemployment and while they search for new engagement**.**

- The cash benefit given to the unemployed persons searching for new employment will be 25 percent of his average earning of 90 days. For super specialty treatment, the ESIC has reduced the requirement of insurable employment of two years to six months with contribution requirement of only 78 days.

- ESI is a self-financing social security and health insurance scheme for Indian workers. It is managed by the **Employees' State Insurance Corporation (ESIC)** which is an autonomous body under Ministry of Labour and Employment. It was established in **1952 as a statutory organisation under the Employee State Insurance Act, 1948.**
- **ESIC is for establishments having more than 10 workers with monthly wage ceiling of Rs. 21,000.**

INTERNATIONAL AFFAIRS

➢ **Neemrana Dialogue: India-Pakistan Track II Initiative Dialogue**

- The Neemrana dialogue, one of the oldest Track-II initiatives between India and Pakistan was renewed and was held in **Neemrana fort in Rajasthan from April 28th to April 30th,2018.**

- The track-II initiative, which was first held in 1991-92, was revived after a long gap. It was reported that the two sides discussed issues related to Kashmir, Siachen, terrorism, cross-border firing and also Sir Creek.

- India has continued to maintain that it will not change its position on terrorism. It has always said that terror and talks cannot go together.

➢ **General Data Protection Regulation (GDPR)**

- It is a sweeping law that gives **residents of European Union more control over their personal data** and seeks to clarify rules and responsibilities for online services with European users.

- It replaces the **EU's previous law governing data protection**, passed in 1995, and makes some dramatic changes to existing conventions.

- **The GDPR applies to any organization that collects, processes, manages or stores the data of European citizens**. This includes most major online services and businesses that collect, process, manage or store data. Because of this, the GDPR essentially sets a new global standard for data protection.

- The **GDPR requires companies that have lost control over customer data,** or that've been hacked, to notify users **within 72 hours.**

➢ **Iran Nuclear Deal**

- Known as the Iran Nuclear Deal, **The Joint Comprehensive Plan of Action (JCPOA)** was a two year long diplomatic initiative from Iran and a group of countries known as the P5+1 – the members of the United Nations Security Council (the US, UK, France, China, Russia) along with Germany**.**

- The deal, reached in Vienna in July 2015 and later ratified by the UN, lifted crippling international sanctions in place on Iran in return for curbs on the country's nuclear programme.

- It ensured that Tehran would abandon any attempts at creating a nuclear arsenal and ended 12 years of deadlock over the issue.

Why Has Trump Withdrawn From It

- Mr Trump said that he believes the Iran nuclear agreement to be a bad deal long before he ran for office. Critics admit it is only a medium-term plan and it also does not address Iran's non-nuclear weapons and missile programmes.

- The president's foreign policy has so far been marked by a significant ratcheting of tensions with Iran, driven by his administration's noted friendliness towards Israel, which opposes the deal.

- Iran is heavily invested in saving the deal, but has threatened that if sanctions are reinstated it could restart its nuclear programme.

A nuclear weapon uses a fissile material to cause a nuclear chain reaction. **The most commonly used materials have been uranium 235 (U-235) and plutonium 239 (Pu-239). Both uranium 233 (U-233) and reactor-grade plutonium have also been used**. The amount of uranium or plutonium needed depends on the sophistication of the design, with a simple design requiring approximately 15 kg of uranium or 6 kg of plutonium and a sophisticated design requiring as little as 9 kg of uranium or 2 kg of plutonium. **Plutonium is almost nonexistent in nature, and natural uranium is about 99.3% uranium 238 (U-238) and 0.7% U-235**. Therefore, to make a weapon, either uranium must be enriched, or plutonium must be produced.

➢ **Mongolia Launches Construction Of First Oil Refinery With Indian Aid**

- Mongolia launched construction of its **first oil refinery**, a long-awaited project that is **funded by India** and **designed to end the country's dependence on Russian fuel.**

- Mongolia's new refinery, planned for completion in late 2022, **will meet all of the nation's demand for gasoline, diesel, aviation fuel and liquefied petroleum gas (LPG).**

- The refinery's financing is **part of a $1 billion credit line agreement between Mongolia and the Export-Import Bank of India.**

- There is India-Mongolia Joint Working Group for Defence cooperation which meets annually. Joint India-Mongolia exercise **'Nomadic Elephant'** is held annually and India is a regular participant in the multilateral exercise **'Khan Quest'** held in Mongolia.

➢ **The Future Trajectory Of The Sino-Indian Water Relations**

- The Trans-border rivers flowing from China to India fall into two main groups i.e. The **Brahmaputra river system** on the Eastern side, which consist of river Siang (main stream of river Brahmaputra) and its tributaries, namely **kameng**, **Subansiri and Lohit** and **the Indus river system** on the Western side consists of river Indus and the river Sutlej.

- The absence of data sharing on Brahmaputra during and after the Doklam standoff and lack of clarity on the intent behind 1,000 Km–long tunnel to transfer water from Yarlung Tsangpo in Tibet to Xinjiang betray China's self declared 'responsible' behaviour involving transboundary waters.

- Another trend likely to influence India's geopolitical position is China's shift in preference from bilateral to multilateral water cooperation — leaving India in an uncomfortable position. In line with its periphery policy (neighbourhood policy), in 2016, China established the *Lancang Mekong Commission (LMC)* with the six Mekong countries as an alternative to the ADB–led *Mekong River Commission*, which China denounced all along.

➢ **U.S. Extraterritorial Sanctions: Begging For A Waiver Is The Worst Possible Option For India**

- India is directly in the crosshairs of the new US extraterritorial sanctions targeting Russia and Iran.

- India is already suffering the unintended consequences of USA's unilateral withdrawal from the Iran nuclear deal — a pullout that has spurred **higher oil-import bills, the rupee's weakening against the US dollar, and increased foreign-exchange outflows.**

- The sanctions threaten to also impede **India's Pakistan-bypassing transportation corridor to Afghanistan and Central Asia via Iran, including the Chabahar port project.**

- The India implications of the new **Countering America's Adversaries Through Sanctions Act (CAATSA)** are even more stark. The US intends to use CAATSA to try and wean India gradually off its craving for Russian weapons so as to boost its own arms sales**.**

- The US is already the **largest arms seller** to India. But it basically has been selling defensive systems, including big-ticket items like the P-8I maritime surveillance aircraft and the C-17 Globemaster III and C-130J Super Hercules military transport planes.

Countering America's Adversaries Through Sanctions Act (CAATSA)

It is a United States federal law that imposed sanctions on Iran, North Korea, and Russia. Its provisions are:

- **Countering Iran's Destabilizing Activities Act of 2017**
- **Countering Russian Influence in Europe and Eurasia Act of 2017**
- **Korean Interdiction and Modernization of Sanctions Act**

In October 2018, **India** inked the historic agreement worth USD 5.43 billion with Russia to procure **four S-400 Triumf surface-to-air missile defence system,** the most powerful missile defence system in the world ignoring the CAATSA act. Two oil companies ordered crude oil from Iran for November ignoring CAATSA.

➢ **India To Provide Tariff Concessions On 3,142 Items To APTA Members**

- India has agreed to provide tariff concessions on 3,142 products to Asia Pacific Trade Agreement (APTA) members, including Bangladesh and Sri Lanka, from July 1.

- APTA is an initiative under the **United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP)** for trade expansion through exchange of tariff concessions among developing country members of the Asia Pacific Region. It is in place since 1975.

- Currently, the following **six** Participating States are parties to APTA: Bangladesh, China, India (founding member), Laos, South Korea, and Sri Lanka (Mongolia is set to become the 7th member)

- Notably**, it is the only operational trade agreement linking China and India.**

- It is the oldest **preferential trade agreement** (PTA) among developing countries in Asia-Pacific, under which the basket of items as well as the extent of tariff concessions are enlarged during the trade negotiating rounds.

➢ **UN Members, Except US and Australia, Agree On First-Ever Global Compact On Migration**

- For the first time ever, United Nations member states, except the US and Australia, have agreed on a deal to better manage international migration, address its challenges, strengthen migrant rights and contribute to sustainable development.

- **Known as the Global Compact for Migration**, the agreement will be formally adopted by world leaders in Morocco in December.

- The **non-binding agreement** on 23 objectives, approved by all 193 member nations except the Us and Australia that pulled out last year, aims to make migration safe and orderly amid issues of national sovereignty and international cooperation.

- The Australian Government has announced that it would not sign the UN Global Compact for Migration saying that the agreement would undermine its existing immigration policies. Australia argues that the Compact is inconsistent with its well-established policies and not in Australia's interest.

- Australia's harsh immigration policy detains asylum-seekers who try to reach the country by boat on remote Pacific islands. While the policy has led to a decline in people-smuggling, hundreds of people are now being held in Papua New Guinea and Nauru.

- The UN estimates there are some **250 million migrants** around the world, or 3.4 percent of the global population. According to Mckinsey Global Institute, in all of the world's developing nations combined, migrants generated roughly $600 billion, or a mere 3 percent of their global gross domestic product (GDP).

- It is framed in consistent with **target 10.7 of the SDG** in which Member States committed to cooperate internationally to facilitate safe, orderly and regular migration.

> On September 19, 2016, the United Nations General Assembly unanimously adopted the **New York Declaration for Refugees and Migrants**. The New York Declaration reaffirms the importance of the international refugee regime and contains a wide range of commitments by Member States to strengthen and enhance mechanisms to protect people on the move. It has paved the way for the adoption of two new global compacts in 2018: a global compact on refugees and a global compact for safe, orderly and regular migration.

➢ **Singapore Summit: Main Points In Trump And Kim Joint Statement**

- **Donald Trump and Kim Jong-un have become the first sitting leaders of their countries** to meet, shaking hands before a summit at the **Capella hotel in Singapore** just 10 months after the US president threatened North Korea with "fire and fury".

- In a joint statement, President Trump and Chairman Kim specified the **key points.**

✓ The two countries' commitment to establishing new relations in order to maintain peace. **The US pledged "security guarantees" to the North and Mr Kim recommitted to "complete denuclearisation**".

✓ Joint efforts to build a lasting and stable peace regime on the Korean Peninsula.

✓ Reaffirming the 27th April 2018 *Panmunjom Declaration*, North Korea commits to work toward complete denuclearisation.

✓ Their commitment to recovering POW/MIA remains, including the immediate repatriation of those already identified.

- **North Korea has founded its regime's stability on Byungjin policy**, i.e. pursuing economic development and nuclear weapons programme simultaneously. **North Korea had also announced to destroy its Punggye-ri nuclear testing zone.**

➢ **South Korean President in India**

- Indian Prime Minister and President of the Republic of Korea (RoK) Moon Jae inaugurated **Samsung's mobile manufacturing plant,** touted as the biggest in the world, in Noida.

- South Korea would be the second country after China with whom India would undertake a joint project in Afghanistan.

- Moon coined a new acronym **'3P Plus'** for boosting bilateral ties through **cooperation for people, prosperity and peace**

- Joint Statement on **Early Harvest Package of the Upgraded Comprehensive Economic Partnership Agreement (CEPA).**

India and RoK would sign an MoU for the construction of the **Queen Hu memorial park in Ayodhya, a historical connect that brings scores of South Koreans to Ayodhya every year**. According to legend, queen Hur Hwang-ok, also known as **Princess Suriratna, princess of Ayodhya, travelled to South Korea in 48 AD and married King Kim Suro of Karak Clan.**

➢ **South Korea's New Southern Policy in Making and The Way Forward**

• New Southern Policy is a newly established diplomatic effort under President Moon Jae-in's administration as part of the Northeast Asia Plus Community of Responsibility.

• This initiative comprises *two pillars: peace and prosperity*. New Southern Policy is counted as prosperity pillar in its initial conception. The policy goal is parallel to New Northern Policy but with different target regions.

• The general idea of this policy is to leverage ASEAN and India as key partners like other major players in the region. This is the **first time in the history of Korean diplomacy after the World War II that both ASEAN and India incorporated as strategic priority for South Korea.**

➢ **Major General Jose Eladio Alcain of Uruguay will be Head UNMOGIP**

• **UN Military Observer Group in India, Pakistan** (**UNMOGIP) was established in January 1949.**

• He will succeed Major General Per Gustaf Lodin of Sweden, who will complete his two-year assignment in july, 2018.

• The first team of unarmed military observers, who eventually formed the nucleus of UNMOGIP, arrived in the mission area in January 1949 to supervise, in the State of Jammu and Kashmir, the ceasefire between India and Pakistan, and to assist the Military Adviser to the United Nations Commission for India and Pakistan (UNCIP), established in 1948 by Security Council resolutions 39 and 47**.**

• Following the India-Pakistan war in 1971 and a subsequent ceasefire agreement of 17 December of that year, the tasks of UNMOGIP have been to observe, to the extent possible, developments pertaining to the strict observance of the ceasefire of 17 December 1971 and to report thereon to the Secretary-General.

• **India has maintained that UNMOGIP has outlived its utility and is irrelevant after the Simla Agreement and the consequent establishment of the Line of Control (LoC).**

• Given the disagreement between India and Pakistan about UNMOGIP's mandate and functions, the Secretary-General's position has been that **UNMOGIP can only be terminated by a decision of the Security Council.**

➢ **First Meeting of India-Bangladesh Joint Committee on Border Haats Held in Agartala**

• The first meeting of the India-Bangladesh Joint Committee on Border Haats was held on 22-23 July 2018 in Agartala, Tripura. In the meeting both sides noted the positive impact of Border Haats on the livelihoods of the people living in areas adjoining the Haats**.**

• India-Bangladesh Border Haat is a border trade market between Bangladesh and India. It is a market place organised by the two countries **one day each week.** It is not only a market for buying daily commodities but also a reunion spot for families living on both sides.

• Currently, **four border haats** are operational along the India-Bangladesh border **– Two located in Meghalaya** at Kalaichar and Balat and **two in Tripura** at Srinagar and Kamalasagar.

- There are **no border haats in operation along the Bhutan and Myanmar borders.**

➢ **PM Narendra Modi Africa Tour 2018: State Visits To Uganda, Rwanda, South Africa**

In the first leg of the visit The Prime Minister Modi reached **Rwanda's capital Kigali** for a two-day visit

- India and Rwanda signed **eight MoU's** in various fields including Defence, Trade, Agriculture, Cultural Exchange, Dairy Cooperation etc.

- India extended **USD 200 million line of credit to Rwanda, to open a High** Commission in Kigali.

- PM Modi gifted cows to 200 households in Rweru model village in Bugesera under Rwandan Government's **Girinka Programme. The name of the initiative is 'Girinka Programme' which translates to 'may you have a cow'.**

Prime Minister Narendra Modi's Visit to Uganda

- India and Uganda signed **four** MoUs in various fields: Defence cooperation, visa exemption for official and diplomatic passport holders, cultural exchange programme etc.

- Indian companies to invest in **Uganda's healthcare sector**.

- India has offered Uganda a total **$200 million** worth of credit to help the East African country expand its **electricity distribution infrastructure** and invest in its **agriculture sector.**

- India will build a **commemoration centre** in Kampala in memory of **Mahatma Gandhi**.

India and South Africa are celebrating 21 years of Strategic Partnership

- MoU between the Indian Council of Agricultural Research, New Delhi, India and the Agricultural Research Council, Pretoria, South Africa on Cooperation in Agricultural Research and Education.

- MoU on the Setting up of the **"Gandhi Mandela Centre of Specialization for Artisan Skills" in South Africa.**

- MoU between ISRO and the South African National Space Agency on Cooperation in the Exploration and uses of Outer Space for Peaceful Purposes.

This year also marks the **125th** year of the **Pietermaritzburg** railway station 'incident' involving Mahatma Gandhi. **Commemorating the Satyagraha movement** , twin stamps of **Mahatma Gandhi and Nelson Mandela** was released.

➢ **2+2 Dialogue: India, US Plan To Work Towards Resolving Maritime Disputes**

- India and the US held the first edition of the twice-deferred two-plus-two talks, centered on key issues including **cross-border terrorism, India's bid to enter the Nuclear Suppliers Group and the contentious issue of H-1B visa**. Five highlights of the joint statement are:

1. **Hotline between Foreign, Defence Ministers**

2. The mutually agreed upon steps to strengthen defense ties further and promote better defense and security cooperation. The efforts included the signing of a **Communications Compatibility and Security Agreement (COMCASA)** that will facilitate access to advanced military systems and enable India to utilise its existing US-origin platforms**.** There were also negotiations on **Industrial Security Annex (ISA)** that will support closer defence industry cooperation and collaboration, and steps to increase personnel exchanges between the two militaries.

3. They called on Pakistan to ensure that the territory under its control is not used to launch terrorist attacks on other countries.

4. Work together and in concert with other partners toward advancing a free, open, and inclusive Indo-Pacific region, based on recognition of ASEAN centrality.

5. Sustainable debt financing practices in infrastructure development.

➢ **UNGA Adopts Resolution on UN Development System Reform**

• The UN General Assembly (UNGA) has adopted a resolution on the **repositioning of the UN development system, in order to align it with the 2030 Agenda for Sustainable Development.**

• By this decision, the functions of Resident Coordinators (RCs) of the UN system in each country are separated from those of the resident representative of the UN Development Programme (UNDP).

• **The "repositioning" process began with an ECOSOC dialogue series in 2014-2015 on positioning the UN development system for a post-2015 era**, followed by the UNGA's adoption, in December 2016, of the Quadrennial Comprehensive Policy Review (QCPR) 2017-2020.

• The **United Nations Development Programme** (**UNDP**) is the **United Nations' global development network**. Headquartered in New York City, UNDP advocates for change and connects countries to knowledge, experience and resources to help people build a better life. It provides expert advice, training and grants support to developing countries, with increasing emphasis on assistance to **the least developed countries**.

• **To accomplish the SDGs and encourage global development, UNDP focuses on poverty reduction, HIV/AIDS, democratic governance, energy and environment, social development, and crisis prevention and recovery**. UNDP also encourages the protection of human rights and the empowerment of women in all of its programmes. The UNDP Human Development Report Office also publishes an annual Human Development Report (since 1990) to measure and analyse developmental progress.

➢ **Indo-Myanmar Land Border Officially Opened, No Special Permission Required For Travel**

• The opening of the land route will abolish the special land entry required for visitors entering through land routes.

• Moreover, the agreement also provides a border pass for people living in border areas to travel within 16 km of the border without special permit.

➢ **Caspian Sea: Five Countries Sign Deal To End Dispute**

• **Russia, Iran, Azerbaijan, Kazakhstan and Turkmenistan - all bordering the Caspian Sea -** have agreed in principle on how to divide it up.

• Debates on *whether the Caspian is a sea or a lake* have been ongoing since the Soviet Union fell apart in 1991, leaving five countries with shorelines on the inland sea instead of two -- the Soviet Union and Iran**.**

• **If deemed a sea,** *the five countries would draw lines extending from their shores to the midway point with littoral neighbors*, **while classifying it as a lake** *would mean the resources would be divided equally among those five countries.*

• The signed convention gives the body of water a "special legal status" which means it is not defined as a sea or a lake. **The surface water will be in common usage, meaning freedom of access**

for all littoral states beyond territorial waters. But the seabed - which is rich in **natural resources - will be divided up.**

- It's estimated that there are 50 billion barrels of oil and nearly 300 trillion cubic feet (8.4 trillion cubic metres) of natural gas beneath its seabed. The disagreement over its legal status has also prevented a natural gas pipeline being built across the Caspian between Turkmenistan and Azerbaijan. This would have allowed Turkmen gas to bypass Russia on its way to Europe.

- The Caspian Sea has a number of different species of **sturgeon,** the fish that yields the highly prized delicacy caviar. Oil pollution has affected the migration routes of sturgeon, according to the UN's Caucasus Environment Outlook.

➢ **Realizing the Promise of Regional Trade in South Asia**

- **A Glass Half Full:** The Promise of Regional Trade in South Asia report launched in Sri Lanka. The report explores the potential of open regionalism, suggesting how policymakers can maximize this to drive economic growth across the region and support deeper global integration.

- Total goods trade within South Asia currently amounts to $23Bn, but gravity models reveal it could be worth $67Bn. This yawning gap between actual and potential trade arises because South Asian countries actively discriminate against each other.

- **Despite the existence of the South Asian Free Trade Area (SAFTA), trading with neighbors is not "free".** This is mainly due to the long list of products that are not included under the concessional tariff of SAFTA.

- The **South Asian Free Trade Area** (**SAFTA**) is an agreement reached on January 6, 2004, at the 12th SAARC summit in Islamabad, Pakistan. It created a free trade area of in Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. The seven foreign ministers of the region signed a **framework agreement on SAFTA to reduce customs duties of all traded goods to zero by the year 2016**.

➢ **Maldives Election: Ibrahim Mohamed Solih Claims Victory**

- Solih, who has been an MP for almost 25 years, played a key role as a close aide of former President Mohamed Nasheed, who lives in exile in Sri Lanka.

- **Previous President Gayoom** had declared an Emergency in the country in February after the Maldivian Supreme Court ordered the release of jailed Opposition leaders.

➢ **What Is A Trade War? And Why Is Trump Targeting China?**

- Essentially, a trade war is a **back-and-forth dispute wherein a country imposes tariffs on certain imports in order to restrict trade.**

- Currently, **China and the United States** are locked in an ongoing trade war as **each country has introduced tariffs on goods traded between each other.**

Trade Grievances

- **Theft Of Intellectual Property And Trade Secrets**

- In many cases, **technology transfers** are effectively required by China's Foreign Direct Investment (FDI) regime, which closes off important sectors of the economy to foreign firms unless they enter into joint ventures with Chinese entities they do not control.

- China has instituted an array of non-tariff barriers meant that some critical sectors of the Chinese economy remained relatively insulated from international competition. China has controlled imports by having a different standards for private, foreign companies than China State Owned companies.

In summary, the United States believes that, **first, certain Chinese laws counteract intellectual property rights by forcing foreign companies to engage in joint ventures with Chinese** companies, in which their new Chinese partners are granted access and permission to use, improve, or replicate their technologies. **Secondly, the United States argues that China is not compliant in recognizing legitimate patents** and that their policies discriminate against foreign imported technology.

- ➢ **India-Russia Joint Statement During Visit Of President Of Russia To India (19th Annual Bilateral Summit)**

- India-Russia cooperation is based on the solid foundations of the **1971 Treaty of Peace, Friendship and Cooperation, 1993 Treaty of Friendship and Cooperation, 2000 Declaration on Strategic Partnership, and 2010 Joint Statement** elevating the Partnership to a **Special and Privileged Strategic Partnership**.

- The Sides welcomed the **agreements reached in November 2017 between their concerned authorities, for cooperation on internal security, drug trafficking and disaster management, including the Joint Action Plan** between the **Narcotics Control Bureau**, **Ministry of Home Affairs** of India and the Ministry of Interior of the Russian Federation for the period of 2018-2020.

- The Sides underscored the vital importance of increasing connectivity between them. They called for the development of the **International North-South Transport Corridor (INSTC) through intensified efforts.**

- The Sides supported the early launch of the **Green Corridor project aimed at the simplification of customs operation**s in respect of goods being transported between India and Russia.

- The Sides highlighted the progress achieved in fulfillment of the agreements envisaged in the MoU on **trilateral cooperation in implementation of the Rooppur Nuclear Power Project in Bangladesh.**

- Both Sides commended the successful completion of the first ever Tri-Services Exercise **INDRA 2017 and committed to continue their Joint Military Exercises – INDRA Navy, INDRA Army and Avia INDRA – in 2018.**

The International North–South Transport Corridor (INSTC) is a 7,200-km-long multi-mode network
of ship, rail, and road route for moving freight
between India, Iran, Afghanistan, Armenia, Azerbaijan, Russia, Central Asia and Europe. The route primarily
involves moving freight from India, Iran, Azerbaijan and Russia via ship, rail and road.

The **Customs Convention on International Transport of Goods under cover of TIR Carnets, 1975 (TIR Convention),** is an international transit system **under United Nations Economic Commission for Europe (UNECE).** The TIR Convention can be an instrument for movement of goods along the International "North-South" Transport (INSTC) Corridor.

The **Ashgabat agreement** is a **multimodal transport agreement** between **India, Iran, Kazakhstan, Oman, Turkmenistan and Uzbekistan** for creating **an international transport and transit corridor** facilitating transportation of goods between Central Asia and the Persian Gulf .

➢ **All You Wanted To Know About Indo-Japan Currency Swap**

- During his recent visit to Japan, PM Modi, apart from discussing bullet trains and yen loans with his Japanese counterpart, also inked a deal for a **bilateral currency swap arrangement.**

- A bilateral currency swap is **an open-ended credit line** from **one country to another at a fixed exchange rate**. The country which avails itself of this loan pays interest to the country which provides it, at a benchmark interest rate such as the Libor (London Inter-bank rate).

- This currency swap arrangement will **allow the Indian central bank to draw up to $75 billion worth of yen or dollars as a loan** from the Japanese government whenever it needs this money.

- **A swap arrangement with Japan provides considerable comfort to India, because Japan is the second largest holder of dollar reserves** in the world after China. Therefore, while Japan is quite unlikely to ask India for a dollar loan, India can make use of such a loan at rock-bottom interest rates.

Other Announcements From The Tour

- **Asia-Africa Growth Corridor (AAGR) announced in 2017** and joint projects in some third countries like Bangladesh, Myanmar, and Sri Lanka and in Africa as well will be taken jointly

- Trilateral naval exercise called **Exercise Malabar** involving the **United States, Japan and India** will be carried on continuous basis.

- **Quadrilateral Security Dialogue** is a strategic **dialogue between India, United States, Japan and Australia will be carried out.**

➢ **African Countries Launch African Continental Free Trade Area (AfCFTA)**

- Following the unveiling of the **African Continental Free Trade Agreement in Kigali, Rwanda, in March 2018**, Africa is about to become the world's largest free trade area: 55 countries merging into a single market of 1.2 billion people with a combined GDP of $2.5 trillion.

- **The goal of the AfCFTA is to create a single market, followed by free movement and a single currency union**. It is understood that the AfCFTA will be "built" in stages and will have protocols (such as Trade in Goods, Trade in Services, Intellectual Property Rights; Investment and Competition) and annexes added to it. Once all documents are concluded and ratified by 22 states, the free trade area will formally exist.

- Countries joining AfCFTA must commit to *removing tariffs on at least 90% of the goods* they produce.

- **Nigeria, Africa's most populous country and another huge economy, has been one of the holdouts,** with the government saying it needs to have further consultations with indigenous manufacturers and trade union.

➢ **First India-Nepal Passenger Train**

• The first passenger train to run on broad gauge between India and Nepal will run from December this year.

• The train will run from Jayanagar in Bihar to Kurtha in Dhanusa district in Janakpur Zone of south-eastern Nepal, which is a 34 km stretch.

• **No visa** will be required for Indian and Nepalese nationals crossing the border through this stretch.

➢ **Chabahar Port**

• **US has exempted India from imposition of certain sanctions for the development of the strategically-located Chabahar port in Iran**, along with the construction of the railway line connecting it with Afghanistan.

• Iran's Chabahar port is located on the Gulf of Oman and is the only oceanic port of the country. **The port gives access to the energy-rich Persian Gulf nations' southern coast and India can bypass Pakistan with the Chabahar port becoming functional.**

➢ **India Vote Against UNGA Draft Resolution on Use of Death Penalty**

• India has voted against a *United Nations General Assembly draft resolution on the use of death penalty*, saying it goes against the statutory law of the country where an execution is carried out in the "rarest of rare" cases.

• The draft resolution, taken up in the Third Committee (Social, Humanitarian, Cultural) of the General Assembly was approved with a recorded vote of 123 in favour, 36 against and 30 abstentions.

• India was among the countries that voted against the resolution, which would have the Assembly call on all States to respect international standards on the rights of those facing death penalty.

➢ **E-Registration for Jobs in 18 Countries**

• Ministry of External Affairs is planning to bring in a rule according to which Passport holders with *"non-Emigration Check Required (non-ECR)" status will have to get themselves registered with the Ministry of External Affairs before taking up jobs abroad*.

• **The rule, which takes effect on January 1, is aimed at the welfare of Indians going abroad**. It applies to jobs in 18 countries, including the six **Gulf Cooperation Council** nations, which have the largest number of expats.

• The **Cooperation Council for the Arab States of the Gulf**, originally (and still colloquially) known as the **Gulf Cooperation Council** (**GCC**) is a regional intergovernmental political and economic union consisting of all Arab states of the Persian Gulf except Iraq.

➢ **Kartarpur Sahib Pilgrim corridor**

• The Union Cabinet approved the building and development of the **Kartarpur corridor from Dera Baba Nanak in Gurdaspur district to the international border,** in order to facilitate pilgrims from India to visit Gurdwara Darbar Sahib Kartarpur on the banks of the Ravi river.

• The Kartarpur corridor will be implemented as an integrated development project with Government of India funding, to provide smooth and easy passage, with all the modern amenities.

• **The gurdwara in Kartarpur stands on the bank of the Ravi, about 120 km northeast of Lahore**. It was here that Guru Nanak assembled a Sikh community and lived for 18 years until his death in 1539. The shrine is visible from the Indian side, as Pakistani authorities **generally trim the elephant grass** that would otherwise obstruct the view.

• **Sikh jathas from India travel to Pakistan on four occasions every year — for Baisakhi, the martyrdom day of Guru Arjan Dev, the death anniversary of Maharaja Ranjit Singh, and the birthday of Guru Nanak Dev.** These Indian pilgrims are given access to all gurdwaras in Pakistan.

➢ **Azov Sea and Russia- Ukraine Sea Clash**

• Russia's capture of three Ukrainian naval ships and over 20 crew members in the disputed **Azov Sea** has refocussed international attention on the conflict on Europe's eastern corridors & Azov sea.

• Ukraine and Russia accuse each other of violating international maritime law. **They refer to the 1982 UN Convention on the Law of the Sea, which both states joined in the 1990s**.

• The countries also have a bilateral agreement on the free use of the Kerch Strait and the Sea of Azov.

• The **Kerch Strait is the only connection between the Black Sea and the Sea of Azov**, and the only way to reach two important Ukrainian ports, Mariupol and Berdiansk. Russia has controlled the strait since annexing Crimea in 2014.

• **Sea of Azov** is a sea in Eastern Europe. To the south it is linked by the narrow (about 4 km or 2.5 mi) Strait of Kerch to the Black Sea, and it is sometimes **regarded as a northern extension of the Black Sea**.

➢ **India Starts Importing LNG from Russia**

• India has begun importing liquefied natural gas (LNG) from Russia at *Dahej import terminal* as part of its strategy to diversify its supply sources and cater to the rapidly rising local energy needs.

• **Russia is the latest country to begin supplying long-term LNG to India after *US, Australia, and Qatar***. Till two years ago the country depended solely on Qatar for long-term supplies.

• In 2012, state-run gas marketer GAIL had signed a 20-year agreement with Russia's energy giant Gazprom for purchase of 2.5 million tonnes of natural gas a year.

• India is the 3rd largest energy consumer and 4th largest LNG importer in the world. Russia is the largest crude oil and second-largest gas producer in the world.

SUMMITS AND ORGANISATION

➢ **Success of 18th Summit of SCO at Qingdao, China.**

Chinese President Xi Jinping delivered a keynote speech. He emphasized the **Shanghai spirit and** proposed **5 suggestions** as below:

1. **The need to build up strength of unity and mutual trust and ensure full implementation of the Qingdao Declaration**, the Outline for the Implementation of the Treaty on Long-Term Good-Neighborliness, Friendship and Cooperation, and other documents.

2. The need to strengthen the foundation for shared peace and security. We need to **actively implement the 2019-2021 program of cooperation for combating the "three evil forces" of terrorism, separatism and extremism**, continue to conduct the "Peace Mission" and other joint counter-terrorism exercises, and enhance cooperation on defense security, law enforcement security and information security.

3. The need to build a powerful engine to achieve common development and prosperity. **We should increase complementarity of our respective development strategies, continue to advance the Belt and Road cooperation** under the **principle of delivering shared benefits through extensive consultation** and joint contribution, accelerate regional trade facilitation, and step up the implementation of the Agreement on International Road Transport Facilitation and other cooperation documents. **China will set up an RMB 30 billion equivalent special lending facility within the framework of the SCO Inter-bank Consortium**.

4. We need to forge closer ties through cultural and people-to-people exchanges. We should actively implement the outline for environmental protection cooperation and other documents, ensure the continued success of such well-recognized programs as the youth exchange camp, and secure solid progress in cooperation in education, science and technology, culture, tourism, health, disaster relief and media. China **offers to provide meteorological services to all parties using its Fengyun-2 weather satellites**.

5. We need to expand partnership networks of international cooperation. By intensifying exchanges and cooperation with SCO observer states, dialogue partners, and other countries in our region, by **enhancing partnerships with the United Nations and other international and regional organizations, and by engaging in dialogue with the International Monetary Fund, the World Bank and other international financial institutions**, we can contribute our share to resolving hotspot issues and improving global governance.

India coined **SECURE strategy** for comprehensive security in the SCO region, which stands for: **security** for citizens, **economic development**, **connectivity** in the region, **unity**, **respec**t to sovereignty and integrity, and **environmental protection.**

The Shanghai Spirit — the core value of the Shanghai Cooperation Organization (SCO) — has played a significant role in safeguarding regional security and promoting regional development.

The SCO's undergirding values, **which features mutual trust, mutual respect, equality, respect for diverse civilizations and pursuit of shared development, was born together with the Shanghai Five mechanism, the precursor of the SCO.**

In 2001, the SCO came into being after Uzbekistan formally joined the Shanghai Five, which were China, Kazakhstan, Kyrgyzstan, Russia and Tajikistan at that time. The Shanghai Spirit then became the guideline for the SCO cooperation.

➢ **Overview: AIIB Annual Meeting**

• The AIIB's third Annual Meeting was held in Mumbai, India on June 25 and 26, 2018.

- This year's theme was **"Mobilizing Finance for Infrastructure: Innovation and Collaboration,"** in recognition of the private sector's vital role in bridging the infrastructure gap.

- The *Asian Infrastructure Forum* was also launched at this year's Annual Meeting, and it focused on creating business development opportunities for participants drawn from project sponsors, financiers, project delivery companies and government.

- **AIIB** is a multilateral development bank that aims to support the building of infrastructure in the Asia-Pacific region. The bank currently has **87 member states** from around the world.

- Recently it also proposed to **invest USD200 million** in the National Infrastructure Investment Fund (NIIF)

> **The Boao Forum for Asia is a non-profit organisation that hosts high-level forums for leaders from government, business and academia in Asia and other continents to share their vision on the most pressing issues in this dynamic region and the world at large**. BFA is modelled on the World Economic Forum held annually in Davos, Switzerland**. Its fixed address is in Bo'ao, Hainan province, China, although the Secretariat is based in Beijing**. The forum, **sometimes known as the "Asian Davos"**, takes its name from the town of Boao, located in China's southern Hainan province.

➤ **IBSA Ministers Adopt Declaration To Contribute To South-South Co-Op**

- Foreign Ministers of India, Brazil and South Africa (IBSA), a tri-nation bloc working to deepen coordination among them on major global issues, have exchanged views and adopted a declaration to contribute to **greater understanding of development and South-South Cooperation (SSC).**

- IBSA has, over the years, emerged as a grouping supporting **welfare and developmental concerns for the Global South,** which have been pursued in the *spirit of access, equity and inclusion.*

- IBSA calls upon the **Global North** to honour its **ODA (Overseas Developmental Assistance)** commitments fully, scale up existing resources and commit additional resources to provide the necessary means to implement SDGs**.**

- The aim of SSC is to create higher levels of capability and economic opportunity for both the partners. South-South Cooperation serves as a complement to and not as a substitute for North-South cooperation, in supporting the acceleration of the development agenda.

What is the Buenos Aires Plan of Action?

- **The Buenos Aires Plan of Action (BAPA) for Promoting and Implementing Technical Cooperation among Developing Countries**, endorsed by the United Nations General Assembly, is the result of a Conference held in Argentina's capital in 1978.
- **Aimed at the promotion and implementation of TCDC (Technical cooperation among developing countries),** the Plan presents 38 recommendations for the enhancement of TCDC, with a focus on increasing the capacity of developing countries and developing their awareness of and confidence in one another's capabilities.

➤ **SAARC Development Fund plans tapping financial markets**

- **SAARC Development Fund (SDF),** the umbrella financial institution for projects in SAARC member countries, is working on a road map to strengthen its credit portfolio and tap the financial market, before converting itself to a full-fledged SAARC Development Bank.

- **Established in 2010 by heads of eight member states**, **the Thimpu-headquartered SDF** has so far completed financial closure of $ 73.75 million of which $ 47 million have already been disbursed.

- It **funds projects in South Asia** region via three windows viz. Social Window, Economic Window and Infrastructure Window.

- SDF's Partnership Conclave 2018 was held in New Delhi.

➢ **10th BRICS Summit Johannesburg Declaration**

- The 10th BRICS Summit was held under the **theme "BRICS in Africa: Collaboration for Inclusive Growth and Shared Prosperity in the 4th Industrial Revolution".**

- **'Johannesburg Declaration**': The declaration reaffirms **principles of democracy, inclusiveness and agrees to fight unilateralism and protectionism.**

Key Points of the Declaration

1. The leaders reaffirmed their commitment to fully implementing the 2030 Agenda for **Sustainable Development and the Sustainable Development Goals (SDGs).**

2. The leaders welcomed the progress towards finalising the Work Programme under the **Paris Agreement** and expressed their willingness to continue working constructively with other Parties.

3. The leaders agreed to strengthen BRICS cooperation in energy, especially in transitioning to more environmentally sustainable energy systems. They also acknowledged that the BRICS Ministers of Energy agreed to establish the *BRICS Energy Research Cooperation Platform* and to develop its Terms of Reference.

4. The leaders reaffirmed their support for the establishment of the **BRICS Agricultural Research Platform (ARP**) initiated by India in 2016. They committed to step up intra-BRICS collaboration including within the frame of the **Agriculture Research Platform(ARP) and the Basic Agriculture Information Exchange System (BAIES).**

5. The leaders expressed commitment to the continued implementation of the Agenda for BRICS cooperation on population matters 2015-2020, which was agreed to by the Ministers responsible for Population Matters in 2014.

6. It calls for expeditious finalisation and adoption of the **Comprehensive Convention on International Terrorism (CCIT)** by the United Nations General Assembly.

7. Recalling the Johannesburg Summit's focus on the 4th Industrial Revolution and the outcomes of the BRICS Meetings of Science and Technology and Industry Ministers, the leaders commended the establishment of the **BRICS Partnership on New Industrial Revolution (PartNIR).**

BRICS is **made up of Brazil, Russia, India, China and South Africa.** The group was formed initially with just four nations –Brazil, Russia, India and China (BRIC). **The term- BRIC was coined by global economist Jim O'Neill in 2001 as an acronym of four countries that were all deemed to be at a similar stage of newly advanced economic development**. In 2009, the **first BRIC Summit was held in Yekaterinburg, Russia and in 2010**, it became a formal institution. In December 2010, China, the Chair of the group then, invited South Africa to join BRIC and attend the Summit in Sanya, China.

➢ **10th Edition of Delhi Dialogue Held in New Delhi**

- The theme of this year's DD X was **"Strengthening India-ASEAN Maritime Cooperation.**

- DD X organised in partnership with the Research and Information System for Developing Countries (RIS).

Delhi Dialogue is a **premier annual track 1.5 event** to discuss politico-security, economic and socio-cultural engagement between India and ASEAN. It has been held annually **since 2009** and political leaders, policy makers, senior officials, diplomats, think tanks and academicians from both sides participate in the discussions **pertaining to ASEAN-India relations**. It is **aimed at finding a common ground and expanding the scope of cooperation between India and ASEAN nations**.

➢ **BIMSTEC Summit - Facts You Need To Know**

- The 4th BIMSTEC summit was held in **Nepal, Kathmandu.** The theme of the fourth BIMSTEC summit is **'Towards a peaceful, prosperous and sustainable Bay of Bengal region.'**

- The meeting is taking place after a gap of four years, the **3rd BIMSTEC Summit** took place in Nay Pyi Taw in 2014.

- **The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is a regional organization** comprising of 7 member states in South Asia and Southeast Asia lying in littoral and adjacent areas of Bay of Bengal constituting a contiguous regional unity.

- This sub-regional organisation came into being on June 6, 1997, through **the Bangkok Declaration.** It is **headquartered in Dhaka, Bangladesh.**

- It comprises of **seven member countries: five deriving from South Asia -- including Bangladesh, Bhutan, India, Nepal, Sri Lanka** -- and two from Southeast Asia, including **Myanmar and Thailand.**

- **Technological and economic cooperation** among South Asian and Southeast Asian countries along the coast of the Bay of Bengal is its main objective.

➢ **RCEP Members Aim At Concluding Trade Negotiations By Year-End**

- Members of the Regional Comprehensive Economic Partnership **(RCEP)**, including India and China, have finalized an **early-harvest "package"** with the aim of concluding trade negotiations by the year-end.

- So far negotiations for four chapters have been concluded. These include customs procedures, trade facilitation and government procurement.

- India has been unsure of remaining in RCEP and granting greater market access because of its whopping $63 billion trade deficit with China.

- India has made it clear that it doesn't favour an "**early harvest**", this means **agreements on all the three pillars** of negotiations **—** goods, services and investment — can be implemented only as a package, not one at a time.

- The steel sector is particularly concerned, as China has been dumping iron and steel products in India at a much lower price than that of the domestic industry

RCEP is a proposed free trade agreement (FTA) between **10 member states of the Association of Southeast Asian Nations (ASEAN)** (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam) and the **6 Asia-Pacific states with which ASEAN has existing free trade agreements** (Australia, China**, India**, Japan, South Korea and New Zealand). RCEP negotiations were formally launched in November 2012 at the ASEAN Summit in Cambodia

➢ **3rd Indian Ocean Conference held in Hanoi, Vietnam**

- The theme of the two- day conference focused on 'Building Regional Architectures', particularly with regards to trade and commerce, security and governance.

- Earlier, the conference was held in Singapore and Sri Lanka in 2016 and 2017 respectively. Organised by Indian Foundation along with the partners from Singapore, Bangladesh and Sri Lanka this is an initiative to bring the state leaders, diplomats and bureaucrats from across the region under one roof to strengthen the understanding among each other.

➢ **International Telecommunication Union(ITU)**

- India has been elected as a Member of ITU Council for another 4-year term (2019-2022).

- The elections to the Council were held during the ongoing ITU Plenipotentiary Conference 2018 at Dubai, UAE.

- **ITU is *an agency of the United Nations (UN)*** whose purpose is to coordinate telecommunication operations and services throughout the world. **Originally founded in 1865**, as the International Telegraph Union, the ITU is the oldest existing international organization. **ITU headquarters are in Geneva, Switzerland.**

➢ **World Custom Organisation (WCO)**

- A regional meeting of WCO was held recently in Jaipur, Rajasthan. The meeting deliberated upon various issues including the steps required for the capacity building and reforms in customs.

- **WCO is independent intergovernmental body whose mission is to enhance effectiveness and efficiency of Customs administrations**. It was established in 1952 as Customs Co-operation Council (CCC**).**

- **It is the only international organization with competence in Customs matters.**

➢ **G-20 Summit 2018**

- The 2018 G20 Summit held in the city of ***Buenos Aires, Argentina***. 19 leaders of the world's biggest economies and a representative of the EU held a meeting on November 30 as part of the G20 summit.

- It will be the ***13th meeting of Group of Twenty (G20) and the first G20 summit to be hosted in South America***.

About G-20
Formed in 1999, the G20 is an international forum of the governments and central bank governors from 20 major economies.

- Collectively, the G20 economies account for around 85 percent of the Gross World Product (GWP), 80 percent of world trade.

- To tackle the problems or the address issues that plague the world, the heads of governments of the G20 nations periodically participate in summits. In addition to it, the group also hosts separate meetings of the finance ministers and foreign ministers..

- The Group was formed with an aim of studying, reviewing, and promoting high-level discussion of policy issues pertaining to the promotion of international financial stability.

➤ **East Asia Summit**

• 13th East Asia summit was held in **Singapore.**

• It was a forum held annually by leaders of 16 countries in the East Asian, Southeast Asian and South Asian regions. Membership has now been expanded to 18 countries including the United States and Russia at the Sixth EAS in 2011.

• EAS has evolved as a forum for strategic dialogue and cooperation on political, security and economic issues of common regional concern and plays an important role in the regional architecture.

• There are *six priority areas of regional cooperation* within the framework of the EAS. These are – Environment and Energy, Education, Finance, Global Health Issues and Pandemic Diseases, Natural Disaster Management, and ASEAN Connectivity. India endorses regional collaboration in all six priority areas.

➤ **Colombia Joins NATO As First "Global Partner" From Latin America**

• Colombia has joined the 29-member countries of NATO as the first Latin American country to officially be a part of the intergovernmental military alliance.

• Although joining as a "global partner" means **Colombia will not have to take part in military action**, the country will be fully accredited in Brussels. Its status as a partner was officially announced in May 2017.

• Colombia is **also part of the NAM, a non-aligned movement** and nuclear threat initiative formed during the cold war, **which states that its members may not be part of any military organisation like the North Atlantic Treaty.**

• It is important, however, to bear in mind that being a "global partner" of NATO is **not necessarily the same as being a member as, although members of the Colombian Armed Forces are able to access UN missions, they do not necessarily have to be military or conflict-oriented.**

• Currently, **the other global partners are Afghanistan, Australia, Iraq, Japan, South Korea, Mongolia, New Zealand and Pakistan**.

• The **North Atlantic Treaty Organization** (**NATO**), also called the **North Atlantic Alliance**, is an intergovernmental military alliance between **29 North American and European countries**.
• The organization **implements the North Atlantic Treaty (also called Washington Treaty) that was signed on 4 April 1949**. NATO constitutes a **system of collective defence** whereby its independent member states agree to mutual defence in response to an attack by any external party.
• NATO's Headquarters are **located in Brussels, Belgium**. Since its founding, the admission of new member states has increased the alliance from the original 12 countries to 29.
• **The most recent member state to be added to NATO is Montenegro on 5 June 2017**.

➤ **India Elected President Of Asia-Pacific Institute For Broadcasting Development**

• India was elected as the president of the Asia-Pacific Institute for Broadcasting Development, **a regional inter-governmental organisation established in 1977** under the auspices of UNESCO**.**

• It is hosted by Malaysia and its secretariat is located in Kuala Lumpur.

• The AIBD is mandated to achieve a vibrant and cohesive electronic media environment in the Asia-Pacific region through policy and resource development.

- **The Asia-Pacific Broadcasting Union (ABU) is a founding organisation of the institute and is a non-voting member of the general conference.**

➢ **OPCW, Chemical Watchdog, Gains Power To Assign Blame**

- Until now, the Organisation for the Prohibition of Chemical Weapons (OPCW) could only say whether chemical weapons were used - but not who had used them.

- Countries have overwhelming voted to give the world's chemical weapons watchdog new powers to assign blame for attacks using banned toxic materials, in a motion backed by the West and opposed by Moscow**.**

- **The CWC's (Chemical Weapon's Convention)** implementing body, the OPCW oversees the global effort to permanently eliminate chemical weapons. Since its 1997 entry into force – with 193 States Parties – it is the most successful disarmament treaty ever, eliminating an entire class of weapons of mass destruction.

- The **Chemical Weapons Convention** (**CWC**) is an arms control treaty that outlaws the production, stockpiling, and use of chemical weapons and their precursors. The full name of the treaty is the **Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction** and it is administered by the Organisation for the Prohibition of Chemical Weapons (OPCW), an intergovernmental organization based in The Hague.

➢ **Asia-Europe Meetings Close With Calls for Supporting WTO, Multilateralism**

- **The 12th Asia-Europe Meeting (ASEM) was held in Brussels, Belgium**, where leaders from 51 countries examined options for greater cooperation on supporting the multilateral trading system, improving climate action, and otherwise backing multilateralism and shared policy objectives**.**

- **The meeting was held under the theme "Global Partners for Global Challenges," and is part of a process that dates back over two decades. Currently, the ASEM brings together the 28-nation EU, Switzerland, Norway, 21 Asian nations, and the ASEAN Secretariat to address a host of topics of common interest.**

- The **EU and Vietnam also signed on the summit margins the Forest Law Enforcement Governance and Trade (FLEGT) Voluntary Partnership Agreement (VPA) aimed at tackling illegal loggin**g and supporting efforts to ensure legal timber trade**.**

The **Asia–Europe Meeting** (**ASEM**) is an Asian–European political dialogue forum to enhance relations and various forms of cooperation between its partners. It was officially established on 1 March 1996 at the first summit in Bangkok, Thailand, by the then 15 members of the **European Union (EU) and the European Commission, the then 7 members of the Association of Southeast Asian Nations (ASEAN), and the individual countries of China, Japan, and South Korea. Currently it has 53 partners.**

The **European Commission** (**EC**) is an **institution of the European Union**, **responsible for proposing legislation**, implementing decisions, **upholding the EU treaties and managing the day-to-day business of the EU.**

The European Council is a **collective body that defines the European Union's overall political direction and priorities**. It comprises the **heads of state** or government of the EU member states, along with the President of the European Council and the President of the European Commission

---

➢ **First Assembly of the International Solar Alliance, 2ⁿᵈ IORA Renewable Energy Ministerial Meeting and the 2nd Global RE-Invest (Renewable Energy Investors' Meet and Expo).**

- The **International Solar Alliance** could replace **OPEC** as the key global energy supplier in the future. The target is to generate 40 percent of India's total energy requirements in 2030 by non fossil fuel based sources

- Modi announced the launch of the **National Energy Storage Mission that will look at manufacturing, deployment, technology development and policy framework.**

- Indian government pitched for **one world, one sun, and one grid** concept to enhance use and production solar energy as an alternate to conventional energy

- As many as 21 countries in the **Indian Ocean Rim Association (IORA)** adopted **the Delhi Declaration on Renewable Energy in the Indian Ocean Region**

- **The Delhi Declaration on Renewable Energy in the Indian Ocean Region** calls for collaboration among IORA member states in meeting the growing demand for renewable energy in the Indian Ocean littorals, development of a common renewable energy agenda for the Indian Ocean region and promote regional capacity building.

- **Delhi Solar Agenda** under which the member states agreed **to pursue an increased share of solar energy in the final energy consumption** in respective national energy mix, as a means of tackling global challenges of climate change.

- The RE-Invest Meet and Expo showcases India's renewable energy potential and the Government's efforts to scale-up capacity to meet the national energy requirement in a socially, economically and ecologically sustainable manner.

- International Solar Alliance (ISA) is an alliance of 121 solar resource rich countries, lying **fully or partially between the Tropics of Cancer and Capricorn.** ISA was jointly launched by the Prime Minister Narendra Modi, and the then President of France, Francois Hollande on November 30, 2015 in Paris on the side-lines of the 21st Conference of Parties (CoP 21) to the United Nations Framework Convention on Climate Change.
- **ISA has presently four ongoing programmes: Scaling Solar Applications for Agricultural Use, Affordable Finance at Scale, Scaling Solar Mini Grids and Scaling Solar Rooftop catering to the needs of solar energy in specific areas.**

Indian-Ocean Rim Association: The Indian Ocean Rim Association (IORA), formerly known as the Indian Ocean Rim Initiative and Indian Ocean Rim Association for Regional Cooperation (IOR-ARC), is an international organisation consisting of coastal states bordering the Indian Ocean. The IORA is a regional forum, tripartite in nature, bringing together representatives of Government, Business and Academia, for promoting co-operation and closer interaction among them.

Dark colored: Members, Light colored Dialogue Partners

➢ **Vostok 2018: A Showcase Of Russian Military Might And Ties With China**

- President Vladimir Putin inspected the **Vostok 2018** war games involving 300,000 troops from Russia's Eastern and Central military districts, the biggest of their kind since the **Zapad 81 exercise in 1981.**

- Both China and Mongolia are sending troops to Vostok 2018, also known as **East 2018**, while **Turkey sent military observers** to the massive Russian Vostok-2018 military exercises, but **declined the invitation to actively participate**.

- Fundamentally, the goal of this specific exercise is to project Russian military power in the Asia-Pacific region. If Russia had not invited China, that would have been viewed by Beijing as a potentially dangerous activity by Russia.

- **Russia is now China's biggest oil supplier and its largest energy company.** Gazprom, is building a 3,000km (1,864mi) gas pipeline that will link eastern Siberia to the Chinese border.

➢ **The Uncertain Future of the INF (Intermediate-Range Nuclear Forces) Treaty**

- President Trump recently made it clear that he intends to withdraw U.S. from the 1987 intermediate range nuclear forces (INF) treaty.

- The former Soviet states that possessed nuclear weapons—**Russia, Ukraine, Belarus, and Kazakhstan—participate in the INF Treaty with the United States, signed in 1987, and entered into force in 1987.**

- It required countries to **destroy their stockpiles of ground-launched ballistic and cruise missiles with ranges between 500 and 5,500 kilometers**. The treaty, which **covers both nuclear and conventionally armed missiles**, also prohibits signatories from possessing, producing, and flight-testing these kinds of missiles. **However, it does not cover air-launched or sea-launched weapons.**

- Beyond the merits of being in or out of the treaty, the U.S. must address the treaty's unintended consequences that resulted in **China's conventionally-armed missile advantage in the Pacific.**

- Over the past four decades, American and Soviet/Russian leaders have used a progression of bilateral agreements and other measures to limit and reduce their substantial nuclear warhead and strategic missile and bomber arsenals.

> The **Strategic Arms Limitation Talks (SALT)**, signed in May 1972, limited strategic missile defenses to 200 (later 100) interceptors.
>
> In November **1972, Washington and Moscow agreed to pursue a follow-on treaty to SALT I. SALT II,** signed in June 1979, limited U.S. and Soviet ICBM, SLBM, and strategic bomber-based nuclear forces to 2,250 delivery vehicles (defined as an ICBM silo, a SLBM launch tube, or a heavy bomber) and placed a variety of other restrictions on deployed strategic nuclear forces.
>
> **The Strategic Arms Reduction Treaty (START I), first proposed in the early 1980s by President Ronald Reagan and finally signed in July 1991,** required the United States and the Soviet Union to reduce their deployed strategic arsenals to 1,600 delivery vehicles, carrying no more than 6,000 warheads as counted using the agreement's rules.
>
> **In June 1992, Presidents George H. W. Bush and Boris Yeltsin agreed to pursue a follow-on accord to START I**. START II, signed in January 1993, called for reducing deployed strategic arsenals to 3,000-3,500 warheads and banned the deployment of destabilizing multiple-warhead land-based missiles.
>
> In March **1997**, Presidents Bill Clinton and Boris Yeltsin agreed to a framework for **START III** negotiations that included a reduction in deployed strategic warheads to 2,000-2,500.
>
> On May 24, **2002,** Presidents George W. Bush and Vladimir Putin signed the **Strategic Offensive Reductions Treaty (SORT**

or Moscow Treaty) under which the United States and Russia reduced their strategic arsenals to 1,700-2,200 warheads each.

On April 8, 2010, the United States and Russia signed New START, a legally binding, verifiable agreement that limits each side to 1,550 strategic nuclear warheads deployed on 700 strategic delivery systems (ICBMs, SLBMs and heavy bombers), and limits deployed and nondeployed launchers to 800.

➢ **Quad Countries to Focus on Maritime Security**

- The "Quad" countries, namely **India, US, Japan and Australia,** will hold their next meeting on the sidelines of the 13 th East Asia Summit at Singapore in mid-November, with the grouping keen to step-up maritime security and disaster relief initiatives as well as economic development projects in the critical Indo-Pacific region.

- The idea was first mooted by Japanese Prime Minister Shinzo Abe in 2007. However, the idea couldn't move ahead with Australia pulling out of it.

➢ **India, US Defence Ties – What are LSA, CISMOA and BECA Agreements?**

- **The Logistics Support Agreement (LSA**): LSA would set a framework for the two countries to share military logistics. For U.S. Navy, for example, **logistics support from India would be a valuable asset**, helping it better project power in the Indian Ocean. LSA would allow each other to access their military bases without any conflict. E.g in 1991 Gulf war, India denied US refueling its aircraft from Indian territory.

- **Communication and Information Security Memorandum of Agreement (CISMOA)** would allow US to supply India with its propriety encrypted communications equipment and systems, thus allowing secure peacetime & wartime communication between high-level military leaders on both sides. CISMOA would extend this capability to Indian and U.S. military assets, including aircraft & ships.

- **Basic Exchange and Cooperation Agreement (BECA)** would set a framework through which the United States could share sensitive data to aid targeting and navigation with India.

These agreements clearly puts emphasis on building **interoperability** and capacity of the emerging partners through joint military exercises, training, and defence equipment sales. US increasingly expects India to play the larger role of a **"net security provider".** It believes that these foundational agreements will facilitate a strong defence and strategic partnership between the two countries.

➢ **UN Chief Antonio Guterres Reiterated His Appeal To Eight Nations, Including India And The US, To Ratify The Comprehensive Nuclear-Test-Ban Treaty**

- Although more than 180 countries have signed the CTBT, and mostly ratified it, the **treaty can only enter into force after it is ratified by eight countries with nuclear technology capacity**, namely China, Egypt, India, Iran, Israel, North Korea, Pakistan and the United States**.**

- By constraining the development and qualitative improvement of nuclear weapons, the treaty puts a brake on the nuclear arms race and serves as a barrier against States that might seek to develop, manufacture and use acquire nuclear weapons in violation of their non-proliferation commitments.

The **Comprehensive Nuclear-Test-Ban Treaty** (**CTBT**) is a multilateral treaty that **bans all nuclear explosions, for both civilian and military purposes, in all environments.** It was adopted by the United Nations General Assembly on 10 September 1996, but has not entered into force, as eight specific states have not ratified the

treaty. The Treaty was negotiated at the Conference on Disarmament in Geneva

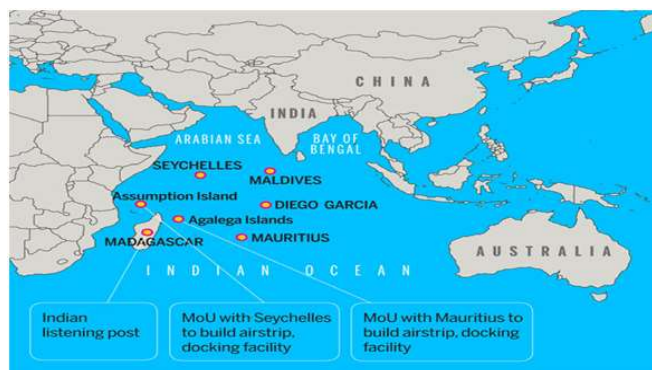➢ **India, Indonesia Agree To Step Up Defence And Maritime Cooperation**

• Both sides have agreed to elevate the **bilateral relationship between the two countries to the level of Comprehensive Strategic Partnership.**

• The highlights of the visit included India agreeing to develop the strategically important Indonesian port **Sabang** in the Indian Ocean, close to the Andamans.

• A link will be established between Andaman Nicobar and Aceh to tap the economic potentials of both areas.

• Under India's Act East policy, we have **SAGAR -- Security and Growth for All in the Region --** which matches with President Widodo's Global Maritime Fulcrum.

• While Modi's SAGAR initiative talks of India's engagement in the Indian Ocean region, Widodo's Global Maritime Fulcrum seeks to cash in on Indonesia's geographic position to make the south-east Asian nation a "fulcrum" of Indo-Pacific maritime activity**.**

Malacca Strait Patrol (MSP): Established in 2004, the **MSP is a quadrilateral arrangement** between **Indonesia, Malaysia, Singapore and Thailand** for intelligence exchange, coordinated air (eye-in-the-sky) and sea patrol through the vital straits. The narrow channel of water, which stretches for around 600 nautical miles, accounts for 25% of world trade. It is also one of the world's energy chokepoints, with a transit volume of over 16 million barrels per day of crude oil and petroleum products. **About 40% of India's trade also goes through the straits.**

➢ **India and Seychelles Agree On Naval Base At Assumption Island**

• India and Seychelles, in a major move, agreed to work together on the joint project at the **Assumption Island** keeping each other's concerns in mind as India ramped up its defence partnership with the Indian Ocean Region country by handing over a **Dornier aircraft and $100 million defence-related Line of Credit** to augment the island nation's defence capabilities.

• The two sides also signed six pacts including a

cyber security arrangement and **White Shipping agreement between the two navies**

- Indian navy has deployed **Maritime reconnaissance** aircraft to Seychelles for surveillance of the island nation's Exclusive Economic Zone. Joint Military Exercise **Lamitye** is also being conducted since **2001.**

➢ The US 'Space Force

- U.S. President Donald Trump has announced the establishment of a "space force" as the sixth branch of the United States military. The other five branches are- United States Army, United States Navy, United States Marine Corps, United States Air Force, and United States Coast Guard

- A Space Force would be part of the Air Force, just like the Marine Corps is part of the Navy.

- It would absorb missions like spacelift operations, command and control of satellites, and more.

➢ Wing Loong II

- **China** has decided to sell 48 **advanced armed drones to Pakistan**. Called the Wing Loong II, the drone can be used for both combat and surveillance missions.

- The Wing Loong II is an improved version of the Wing Loong 1 **Unmanned Aerial Vehicle. The Wing Loong II can carry bombs and air-to-surface missiles**. It is also integrated with day and infrared cameras and sensors to collect surveillance and targeting data.

➢ Draft Bill On Human Trafficking

- Lok has Sabha passed the landmark Trafficking of Persons (Prevention, Protection and Rehabilitation) Bill, 2018. **Trafficking in human beings is the 3rd largest organized crime violating human rights in the country.**

PROVISIONS IN BILL

➤ In aggravated trafficking crimes, **punishment ranges from minimum 10 years' RI to life** and fine not less than ₹1 lakh	repatriation of victims – within a period of one year from taking cognisance
➤ NIA to perform tasks of **Anti-Trafficking Bureau** at national level	➤ **Victims entitled to interim relief within 30 days** to address their physical, mental trauma and appropriate relief within 60 days from the date of filing of charge sheet
➤ **Bill provides for attachment & forfeiture of property** and also proceeds from crime	➤ **Rehabilitation fund, designated courts** in each district for speedy trial
➤ **Time-bound trial and**	

- **What Constitutes Human Trafficking**

- ✓ Trafficking for the purpose of forced labor, begging etc.

- ✓ Trafficking by administering chemical substance or hormones on a person for the purpose of early sexual maturity.

- ✓ Trafficking of a woman or child for the purpose of marriage or under the pretext of marriage.

➢ India's Nuclear Triad

- India has declared that its nuclear triad, stated in its nuclear doctrine, is operational after indigenous ballistic missile nuclear submarine INS Arihant recently achieved a milestone by conducting its first deterrence patrol.

- INS Arihant is now capable of prowling the deep seas carrying ballistic missiles equipped with nuclear warheads.

- This places India in the league of the few countries that can design, construct and operate ship submersible ballistic nuclear (SSBN).

- Countries With Nuclear Triad: United States, Russia, France, China, and India.

➢ Border Area Development Programme

- The Centre has released more than Rs. 113 crore to to Assam, Nagaland, Sikkim, Gujarat, Rajasthan and Uttarakhand under the Border Area Development Programme (BADP).

- The Border Area Development Programme (BADP) has been implemented through 17 States (viz. Arunachal Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan, Sikkim, Tripura, Uttar Pradesh, Uttarakhand and West Bengal) which constitute the International Land Borders.

- The funds under BADP are provided to the States as a 100% non-lapsable Special Central Assistance. The programme is supplemental in nature and the budget allocation for the financial year 2015-16 is Rs.990 crore.

- The BADP schemes include construction of primary health centres, schools, supply of drinking water, community centres, connectivity, drainage to enable sustainable living in border areas.

- It also covers schemes or activities relating to Swachhta Abhiyan, skill development programmes, promotion of sports activities in border areas, promotion of rural tourism, border tourism, protection of heritage sites, construction of helipads in remote and inaccessible hilly areas, which do not have road connectivity.

➢ Indian Ocean Naval Symposium

- The 10th anniversary celebrations of the Indian Ocean Naval Symposium (IONS) is being held in Kochi.

- IONS, the 21st century's first significant international maritime security initiative launched in February 2008, provides a forum for discussion of regional maritime issues and promotes friendly relationships among member nations. It presently has 24 members and eight observer navies.

- **It is** *a* **voluntary initiative** that seeks to increase maritime co-operation among navies of the littoral states of the Indian Ocean Region by providing an open and inclusive forum for discussion of regionally relevant maritime issues and, in the process, endeavors to generate a flow of information between naval professionals that would lead to common understanding and possibly agreements on the way ahead.

- ➤ **Ganga Gram Swachchhta Sammelan**

- Ganga Gram Swachchhata Sammelan was recently organized at **Chyavan Rishi Ashram** in **Chousa Village of Buxar district in Bihar.**

- *The objectives of Ganga Gram Project* include solid and liquid waste management, renovation of ponds and water resources, water conservation projects, organic farming, horticulture, and promotion of medicinal plants.

- Ganga Gram vision is an integrated approach for holistic development of villages situated on the banks of River Ganga with active participation of the villagers.

- ➤ **National Mission for Clean Ganga (NMCG)**

- National Mission for Clean Ganga (NMCG) in partnership with **HCL Foundation** and German development agency **GIZ** had organized "**Bal Ganga Mela**" at HCL's Noida campus in Nov' 2018.

- The Mela was organized with the objective to create awareness among school children on the importance of water in general and rivers in particular, so that they understand the importance of unpolluted, clean water and water security.

- Also, to foster respect for the natural environment and motivate children to become ambassadors of change, who influence and motivate others towards river rejuvenation and water conservation.

- ➤ **National River Ganga (Rejuvenation, Protection and Management) Bill 2017**

- The bill propose to **ban the construction** of jetties, ports or "permanent hydraulic structures" in the Ganga, **unless permitted by the National Ganga Rejuvenation Authority**.

- It proposes to create **a management structure** that will supervise the health of the 2,500-kilometre long Ganga which the draft Bill defines as **'India's national river**.'

- The Bill lays down a host of **restrictions to ensure the "uninterrupted, ecological flow"** of the river.

- The proposed legislation specifies that **"unauthorized" activities that cause obstruction or discontinuity of water in the River Gang** due to engineered diversion of water or stoppage of water. Carrying out such activities are liable to a prison term of 3 years or fines upto ₹50 crore, or both.

- The **Armed Ganga Protection Corps (GPC)** personnel will be provided by the ministry of home affairs and will be deployed by the National Ganga Rejuvenation Authority. The GPC personnel will have power to arrest those who pollute the river covering offences like obstructing the flow of the river to commercial fishing.

The Bill has listed out a list of offences marked as cognizable which includes:

- Construction activities causing obstruction in the river.

- Withdrawal of ground water for industrial or commercial consumption from the land fronting the river and its tributaries.

- Commercial fishing or aqua culture in the river and its tributaries.

- Discharging untreated or treated sewage into the river.

➢ **Himalayan State Regional Council**

• NITI Aayog has constituted the *'Himalayan State Regional Council'* to ensure sustainable development of the Indian Himalayan region.

• *Composition:* The Council will be chaired by the Dr VK Saraswat, Member, NITI Aayog and will consist of the Chief Secretaries of the Himalayan States as well as the Secretaries of key Central Ministries, senior officers of NITI Aayog as well as special invitees.

• *Objective:* The Council has been constituted to review and implement identified action points based on the Reports of five Working Groups, which were established along thematic areas to prepare a roadmap for action.

• *Functions:* The Himalayan States Regional Council will be the nodal agency for the Sustainable development in the Himalayan Region which consists of the twelve States namely Jammu &Kashmir, Uttarakhand, Himachal Pradesh, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, two districts of Assam namely Dima Hasao and KarbiAnglong and Darjeeling and Kalimpong in West Bengal.

➢ **India's E-Waste Generation**

• Despite the government's emphasis on Swachh Bharat Abhiyaan and Smart Cities project, **India continues to be generating highest e-waste** vis-à-vis China, USA, Japan and Germany- according to a recent ASSOCHAM-NEC study .

• In India, **Maharashtra** contributes the largest e-waste of 19.8%, followed by **Tamil Nadu** (13%) and **Uttar Pradesh** (10.1%).

• **Electronic waste** or **e-waste** describes discarded electrical or electronic devices. Used electronics which are destined for reuse, resale, salvage, recycling, or disposal are also considered e-waste.

• **Electronic scrap components**, such as CPUs, **contain potentially harmful materials such as lead, cadmium, beryllium, or brominated flame retardants**. Recycling and disposal of e-waste may involve significant risk to health of workers and communities in developed countries. Informal processing of e-waste in developing countries can lead to adverse human health effects and environmental pollution.

> **The Ministry of Environment, Forest and Climate Change** had notified the **E-Waste Management Rules, 2016** in supersession of the e-waste (Management & Handling) Rules, 2011. Manufacturer, dealer, refurbisher and Producer Responsibility Organization (PRO) have been introduced as additional stakeholders in the rules. **Compact Fluorescent Lamp (CFL) and other mercury containing lamp brought under the purview of rules.**

➢ **Toxic Air Is Causing Malnutrition In Trees**

• Besides affecting human health, **air pollution** is also causing malnutrition in trees by harming a **fungi** that is important for providing mineral nutrients to tree roots.

• **Mycorrhizal fungi is hosted by the trees in their roots to receive nutrients from the soi**l. These fungi provide essential nutrients like nitrogen, phosphorus and potassium from soil in exchange for carbon from the tree.

• This **plant-fungal symbiotic relationship** is crucial for the health of the tree. However, **high levels of the nutrition elements like nitrogen and phosphorus in the mycorrhizae changes them to act as pollutants rather than nutrients.**

➢ **UN World Day to Combat Desertification and Drought**

• **"LAND has true value. Invest in it." This was the theme** for the observance of World Day to Combat Desertification and Drought (WDCD) this year (2018)**. Each year, WDCD is observed on June 17** to raise awareness on the global and national actions that address desertification, land degradation and drought**.**

• **SDG 15** invites everyone to protect life on land, which can be done by restoring and protecting our forests.

• **The UNCCD estimates** that a **third of all land** on Earth is so severely degraded that it does not cover the basic needs of people living there

• The three **Rio Conventions—on Biodiversity, Climate Change and Desertification—**derive directly from the **1992 Earth Summit. Each instrument represents a way of contributing to the Sustainable Development Goals of Agenda 21.**

• Agenda 21 is **a non-binding** action plan of the United Nations with regard to sustainable development. It is a product of the Earth Summit (UN Conference on Environment and Development) held in Rio de Janeiro, Brazil, in 1992.
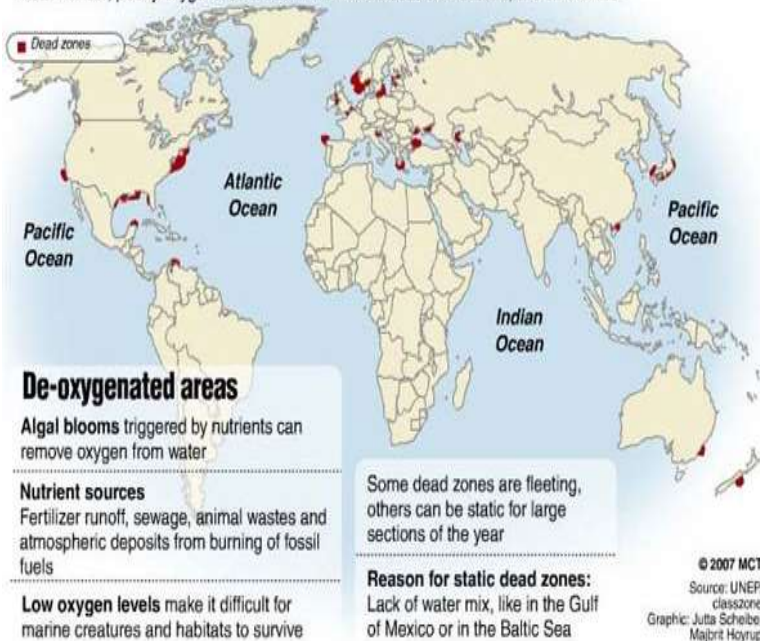
Established in 1994, the United Nations to Combat Desertification (UNCCD) is the **sole legally binding international agreement linking environment and development to sustainable land management**. The Convention addresses specifically the **arid, semi-arid and dry sub-humid areas**, known as the drylands. The UNCCD is particularly committed to a **bottom-up approach**, encouraging the participation of local people in combating desertification and land degradation.

➢ **Gulf of Mexico 'Dead Zone' Will Persist For Decades**

• A dead zone occurs at the bottom of a body of water when there isn't enough oxygen in the water to support marine life. Also known as **hypoxia,** it's created by nutrient runoff, mostly from over-application of fertilizer on agricultural fields during the spring.

• Nutrients such as **nitrogen flow from North America's corn belt** through streams and rivers before ending up in the Gulf of Mexico. The nitrogen can spur the growth of algae, and when the algae die, their decay consumes oxygen faster than it can be brought down from the surface

• Dead zones are **reversible** if their causes are reduced or eliminated.

• **The Bay of Bengal** hosts a 'dead zone' of an estimated 60,000 square kilometres. The Bay of Bengal has long stood as an enigma because standard techniques suggest no oxygen in the waters, but, despite this, there has been no indication of nitrogen loss as in other 'dead zones' of the global ocean.

Marine dead zones
"Dead zones", poorly oxygenated areas in the world's seas and oceans, are on the rise.

■ Dead zones

De-oxygenated areas

Algal blooms triggered by nutrients can remove oxygen from water

Nutrient sources
Fertilizer runoff, sewage, animal wastes and atmospheric deposits from burning of fossil fuels

Low oxygen levels make it difficult for marine creatures and habitats to survive

Some dead zones are fleeting, others can be static for large sections of the year

Reason for static dead zones:
Lack of water mix, like in the Gulf of Mexico or in the Baltic Sea

© 2007 MCT
Source: UNEP, classzone
Graphic: Jutta Scheibe, Majbrit Hoyrup

➢ **India Committed To Eliminate All Single-Use Plastic In The Country By 2022**.

• India was the global host of **2018 World Environment Day (June 5, 2018)** with **"Beat Plastic Pollution"** as the theme, reflecting world commitment to combat single-use plastic pollution.

• **Plastic Waste (Management and Handling) Rules, 2016** to regulate manufacture, sale, distribution and use of plastic carry bags

✓ *It defines the minimum thickness of plastic carry bags i.e. 50 microns.*

✓ *Extended Producer Responsibility and responsibility of local bodies*

✓ *Rsponsibility of street vendors as well as waste generators*

• **Single use Plastic account for 50% of the plastic we use**, with none states in India have plans in place to tackle single use plastics

• **Single-use plastics, or disposable plastics, are used only once before they are thrown away or recycled.** These items are things like plastic bags, straws, coffee stirrers, soda and water bottles and most food packaging**.**

• Petroleum based plastic is not biodegradable and usually goes into a landfill where it is buried or it gets into the water and finds its way into the ocean. Although plastic will not biodegrade (decompose into natural substance like soil,) it will degrade (break down) into tiny particles after many years.

➢ **Odisha Beach Is Asia's First To Get 'Blue Flag' Tag**

• The Ministry of Environment, Forest and Climate Change had started a pilot project under a **Unified Coastal Areas Management Programme** to develop the Indian beaches according to the Blue Flag standards in December 2017

• **The Chandrabhaga beach** on the Konark coast of Odisha will be the first in Asia to get the Blue Flag certification — the tag given to environment-friendly and clean beaches, equipped with amenities of international standards for tourists.

• Twelve more beaches in the country are being developed by the **Society for Integrated Coastal Management (SICOM),** an Environment Ministry's body working for the management of coastal areas, in accordance with the Blue Flag standards.

• The standards were established by the **Copenhagen-based Foundation for Environmental Education (FEE) in 1985.**

• **The Blue Flag programme was first started in Paris in 1985 and its main objective was to make all the beaches environment-friendly.** In the span of two years, all the beaches of Europe were Blue Flag certified.

➢ **Rare Spider Resurfaces After 150 Years**

• Scientists rediscovered after 150 years a rare species of spider, which was believed have become extinct, from the **Wayanad Wildlife Sanctuary (WWS)** located in Kerala.

• The spider belonged to the family of **jumping spiders (Salticidae)** and scientifically named as **Chrysilla volupes.**

• **A species that is not seen for more than 100 years is considered extinct**. So this finding underlines the urgent need to conduct more exploratory survey of faunal diversity in India.

Wayanad wildlife sanctuary is **contiguous to the protected areas of Nagarhole and Bandipur of Karnataka on the north-east and Mudumalai of Tamilnadu on the south –east**. The sanctuary is an integral part of the **Nilgiri Biosphere Reserve**. Interestingly, it was from here that **Pazhassi Raja** fought valiantly against the British.

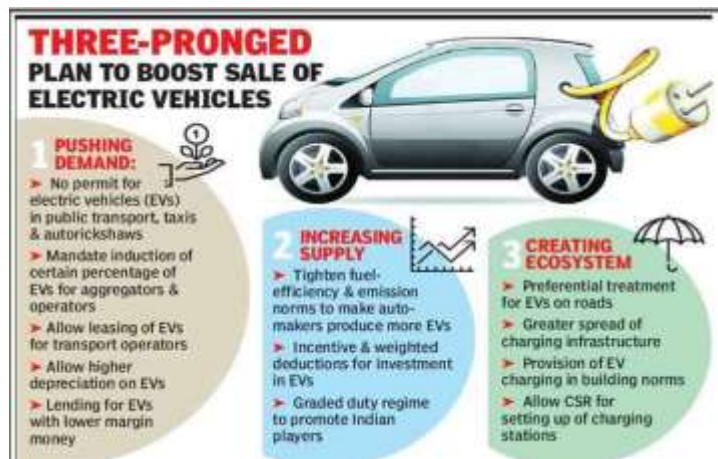➢ **Government To Team Up With Google For Flood Forecasting**

- **Central Water Commission (CWC),** India's apex technical organization in the field of Water Resources, has entered into a Collaboration Agreement with Google.

- Under this Agreement, CWC and Google will share technical expertise in the fields of artificial intelligence, machine learning, geospatial mapping and analysis of hydrological observation data to collaborate on:

  - (i) improving flood prediction systems, which will help provide location-targeted, actionable flood warnings,

  - (ii) high priority research project utilizing Google Earth Engine to help visualize and improve flood management and

  - (iii) (iii) a cultural project to build online exhibitions on the Rivers of India .

- The Ministry had earlier launched an ambitious programme **'National Hydrology Project' (NHP)** during the year 2016-17. NHP is a _World Bank assisted_ central sector scheme with pan India coverage. The objective of National Hydrology Project is to improve the extent, quality, and accessibility of water resources information, decision support system for floods and basin level resource assessment/planning and to strengthen the capacity of targeted water resources professionals and management institutions in India.

➢ **Chhattisgarh, Madhya Pradesh To Face Decline In Living Standard: World Bank**

- The report titled "**South Asia's Hotspots**: The Impact of Temperature and Precipitation Changes on Living Standards", states that **rising temperatures and changing monsoon rainfall patterns can cost India 2.8 % of GDP** and depress the living standards of nearly half of the country's population by 2050.

- The report **defines hotspot** as a location where changes in average temperature and precipitation will have a negative impact on living standards.

➢ **Govt. Asks Car Manufacturers To Raise Fuel Efficiency By 30%, Promote Hybrid/Electric Motors**

- A panel, headed by Road Transport Secretary Y S Malik, has presented a 15 point plan of action to aid car manufacturers to switch from Internal Combustion Engines (IECs) to Electric Vehicles (EVs).

- The ISRO has, on parallel lines, called upon industry leaders to make bids to avail its **indigenously developed Lithium-Ion Cell Technology.**

THREE-PRONGED PLAN TO BOOST SALE OF ELECTRIC VEHICLES

1 PUSHING DEMAND:
► No permit for electric vehicles (EVs) in public transport, taxis & autorickshaws
► Mandate induction of certain percentage of EVs for aggregators & operators
► Allow leasing of EVs for transport operators
► Allow higher depreciation on EVs
► Lending for EVs with lower margin money

2 INCREASING SUPPLY
► Tighten fuel-efficiency & emission norms to make auto-makers produce more EVs
► Incentive & weighted deductions for investment in EVs
► Graded duty regime to promote Indian players

3 CREATING ECOSYSTEM
► Preferential treatment for EVs on roads
► Greater spread of charging infrastructure
► Provision of EV charging in building norms
► Allow CSR for setting up of charging stations

➢ **Uttarakhand HC Declares Animals To Be 'Legal Persons**

• The Uttarakhand High Court has accorded the status of "**legal person or entity" to animals in the State**, saying "they have a distinct persona with corresponding rights, duties and liabilities of a living person**."**

• The **entire animal kingdom, including avian and aquatic ones,** are declared as legal entities having a distinct persona with corresponding rights, duties and liabilities of a living person .

• The court also ordered for load limits to be draught by animals, various aspects of animal safety such as right of passage for animal carts, etc.

➢ **Four Species Added To Recovery Programme By Wildlife Board**

• The National Board for Wildlife (NBWL) recently added four species- **the Northern River Terrapin, Clouded Leopard, Arabian Sea Humpback Whale, Red Panda**- to a Recovery Programme for Critically Endangered Species on the recommendation of a Standing Committee.

• The progamme is one of the three components of the centrally funded scheme, **Integrated Development of Wildlife Habitats (IDWH)**. Started in 2008-09, IDWH is meant for providing support to protected areas (national parks, wildlife sanctuaries, conservation reserves and community reserves except tiger reserves), protection of wildlife outside protected areas, and recovery programmes for saving critically endangered species and habitats.

• The programme, which **already covers 17 species across the country**, includes legal sanction against hunting, financial assistance to states to protect the species, creation of sanctuaries, and even the CBI's assistance in prosecuting the poachers**. These species include: *the Snow Leopard, Bustard (including Floricans), Dolphin, Hangul, Nilgiri Tahr, Marine Turtles, Dugongs, Edible Nest Swiftlet, Asian Wild Buffalo, Nicobar Megapode, Manipur Brow-antlered Deer, Vultures, Malabar Civet, Indian Rhinoceros, Asiatic Lion, Swamp Deer and Jerdon's Courser*.**

• **National Board for Wild Life** is a "**Statutory Organization" constituted under the Wildlife Protection Act, 1972**. It is chaired by the **Prime Minister** and its vice chairman is *Minister of Environment.* Theoretically, the board is "advisory" in nature and advises the Central Government on framing policies and measures for conservation of wildlife in the country**.** It is a very important body because it serves as apex body to review all wildlife-related matters and approve projects in and around national parks and sanctuaries.

• **WTI**: It is a leading Indian nature conservation organisation committed to the service of nature. Its mission is to conserve wildlife and its habitat and to work for the welfare of individual wild animals, in partnership with communities and governments. WTI was **formed in November 1998 i**n response to the rapidly deteriorating condition of wildlife in India. WTI is a registered charity in India (under Section 12A of the IT Act, 1961).

➢ **Why Fish Are Losing Their Sense Of Smell**

• According to recent study, fish are losing their sense of smell **as rising carbon emissions is turning water they live more acidic. CO_2** is absorbed by seawater **forming carbonic acid.** Due of ocean acidification, fish will lose some of their smelling sense, making it more difficult to survive

• **Since 1800's, ocean CO_2 levels have risen by 43%. It is predicted to be more than double current level by the end of the century**

• **Ocean acidification is the ongoing decrease in the pH of the Earth's oceans, caused by the uptake of carbon dioxide (CO_2) from the atmosphere.** An estimated 30–40% of the carbon dioxide from human activity released into the atmosphere dissolves into oceans, rivers and lakes.

- **Causes:** High concentration of carbon dioxide, cement manufacturing, Burning of fossil fuels, Chemical reactions causing high concentration of hydrogen ions, decrease in carbonate ions.

➤ **India's Genetically Modified Crop Area Fifth Largest In World**

- India has the **world's fifth largest cultivated area under genetically modified (GM) crops**, at 11.4 million hectares (mha) in 2017.

- But unlike other big growers, its entire GM crop area is under a single crop — cotton — incorporating genes from the **Bacillus thuringiensis or Bt soil bacterium** coding for resistance against **heliothis bollworm insect pests.**

- Field trials for 21 GM food crops, including GM vegetables and cereals have been approved by the government, though **commercial cultivation of GM food has not been permitted by any State Government till now.**

- **"Genetic modification" or "genetically modified" short for GM involves altering the genes of an organism, be it a plant, animal or microorganism**. This can be done by altering an existing section of DNA, or inserting a gene from another organism.

- India spends roughly around $12 billion annually on vegetable oil imports. **GM mustard** has been considered by agri-experts as a solution for the country"s edible oil deficit because it has yields upto 30% higher than the normal varieties.

- The variety –named as **Dhara Mustard Hybrid-11 or DMH-11** which has been developed by a team of scientists from Delhi University led by former Vice Chancellor Deepak Pental by genetically modifying mustard variety **"Varuna" and crossed it with an Eastern European line.**

➤ **Climate Change Threatens The Nilgiri Tahr**

- Even under moderate scenarios of future climate change, **tahrs** could lose approximately 60% of their habitats from the 2030s on,

- They found that **tahr strongholds such as Chinnar, Eravikulam and Parambikulam in Kerala** will still be stable habitats under different climate change scenarios.

- However, other regions, including parts of **Tamil Nadu's Kalakkad Mundanthurai Tiger Reserve and the wildlife sanctuaries of Peppara, Neyyar, Schenduruny and Srivilliputhur**, could experience severe habitat loss in future; in total, approx. 60% of tahr habitat could be lost

- According to the report, only the **Eravikulam and Mukurthi National Parks** stress on **tahr-centered conservation** activities in their management plans.

- Nilgiri tahrs are stocky goats with short, coarse fur and a bristly mane. They are Listed in **Schedule I of Wildlife (Protection) Act, 1972 and as Endangered on IUCN Red List.**

➤ **National Bamboo Mission(NBM)**

- In April 2018, a restructured NBM was approved by the GOI with an investment of Rs 1290 crore in the coming 2 years.

- The restructured NBM will aim to support the development of the entire value chain of the bamboo sector starting from planting material, plantation, creation of facilities for collection, aggregation, processing marketing, micro, small & medium enterprises, skill development and brand building initiative .

- To facilitate that the benefit flow to the farmers, **bamboo outside forest areas has been excluded from the definition of tree by amending Section 2 (7) of the Indian Forest Act, 1927** by the GOI in November 2017.

- **India is the world's second largest cultivator of bamboo after China**, with 136 species and 23 genera spread over 13.96 million hectares

- In October 2006, the Government of India (GOI) had launched the National Bamboo Mission (NBM) on the basis of the National Mission on Bamboo Technology and Trade Development Report, 2003.

➢ **Ganga Vriksharopan Abhiyan**

- National Mission for Clean Ganga (NMCG) is running **"Ganga Vriksharopan Abhiyan"** in five main stem Ganga basin states – *Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal*

- The drive was launched on the 9th of July, and the week upto 15th July was observed as **'Shubharambh Saptah.**

- State Forest Departments of these states have been made the nodal agencies for the smooth and effective execution of the campaign. The participation from **Nehru Yuva Kendra Sangathan (NYKS), Ganga VicharManch (GVM), NGOs and educational institutions has been encouraging**

- The campaign, which has been initiated as part of the **Forest Interventions in Ganga (FIG) component of Namami Gange programme**, is significant as it aims to bring greater awareness among people and other stakeholders regarding the importance of afforestation for the task of Ganga Rejuvenation.

➢ **System of Air Quality and Weather Forecasting (SAFAR)**

- A state-of-the-art Air Quality and Weather Forecast System– **SAFAR (System of Air Quality and Weather Forecasting),** first of its kind in the country, has been installed

- In addition to monitoring and forecasting of regular air quality and weather parameters, the **Chandni Chowk air quality station** will also measure sun's UV-Index and will provide measurement of online automatic ultrafine particles PM1 and Mercury, both of which have direct relevance to human health

- The system was developed indigenously in record time by **Indian Institute of Tropical Meteorology, Pune** and operationalized by **India Meteorological Department (IMD)**

- The system will be an **integral part of India's first Air Quality Early Warning System** operational in Delhi and will strengthen the existing air quality network of SAFAR, Central Pollution Control Board and Delhi Pollution Control Committee.

- **The National Air Quality Index** (AQI) was launched in New Delhi on 17 September 2014 under the Swachh Bharat Abhiyan.
- There are **six AQI categories**, namely Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe.
- The **proposed AQI will consider eight pollutants (PM10, PM2.5, NO2, SO2, CO, O3, NH3, and Pb)** for which short-term (up to 24-hourly averaging period) National Ambient Air Quality Standards are prescribed. The Central Pollution Control Board along with State Pollution Control Boards has been operating National Air Monitoring Program (NAMP) covering 240 cities of the country.

➢ **India To Expand Polar Research To Arctic As Well**

- Government has renamed the **National Centre for Antarctic and Ocean Research (NCAOR)** — since 1998, charged with conducting expeditions to India's base stations to the continent — as the **National Centre for Polar and Ocean Research.**

- **India only has one Arctic observation station near Norway**. It is also in talks with Canada and Russia, key countries with presence in the Arctic circle, to establish new observation systems

- It has already established a high-altitude research station in the Himalayas**,** which it views the Himalayas as a "third pole" because of the large quantities of snow and ice it holds called **HIMANSH,** at Spiti, Himachal Pradesh.

- While annual missions to maintain India's **three bases in Antarctica** will continue, the new priorities mean that there will be more expeditions and research focus on the other pole

- **Dakshin Gangotri** was the **first base in Antartica**, superceded by **Maitri** , and **Bharati** is the newest base in Antartica.

- India is already an **observer at the Arctic Council** — a forum of countries that decides on managing the region's resources and popular livelihood and, in 2015, set up an underground observatory, called **IndARC,** at the Kongsfjorden fjord, half way between Norway and North Pole.

In 1996, **the Ottawa Declaration** formally **established the Arctic Council as a high-level intergovernmental forum** to provide a means for promoting cooperation, coordination and interaction among the Arctic States, with the involvement of the Arctic Indigenous communities and other Arctic inhabitants on common Arctic issues; in particular, **issues of sustainable development and environmental protection in the Arctic.**

Arctic Council Member States are **Canada, the Kingdom of Denmark (including Greenland and the Faroe Islands), Finland, Iceland, Norway, Russian Federation, Sweden, and the United States of America.**

➢ **Breathe India, a Niti Aayog Action Plan To Fight Air Pollution**

- The draft action plan titled **'Breathe India'** includes encouraging electric vehicles, phasing out private diesel vehicle and development of crop residue utilisation policy.

- According to a recent WHO database (2018**), Kanpur, Faridabad, Gaya, Varanasi, Agra, Gurgaon, Muzaffarpur, Lucknow and Patna are the top ten most polluted cities in India**.

➢ **Dolphin Population Declines In India's Only Dolphin Sanctuary**

- The population of the *endangered* Gangetic river dolphin has declined at the **Vikramshila Gangetic Dolphin Sanctuary (VGDS)** in Bihar's Bhagalpur district, **India's only sanctuary for its national aquatic animal.**

- **The number of dolphins in the sanctuary had declined to 154 from 207 in 2015.**

- The **movement of big cargo vessels in the river and dredging activities have impacted the number of dolphins**. There might be other reasons but these two seem to be very important for the decline in number of dolphins in the sanctuary area.

- **Last year dolphin experts had warned that due to their effective blindness, and dependence on echolocation**, the Gangetic dolphins would suffer from the noise pollution created by large ship propellers, and by dredging.

- The Ganges River dolphin inhabits the **Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu river systems of Nepal, India, and Bangladesh.**

- The Ganges Dolphin is among the four freshwater dolphins found in the world – the other three are found in the **Yangtze River (China), the 'bhulan' of the Indus (Pakistan), and the 'boto' of the Amazon River (Latin America).**

➢ **Red Sanders Not Endangered Anymore**

- The International Union for Conservation of Nature **(IUCN),** an international organisation for nature conservation, has now reclassified red sanders (*Pterocarpus santalinus*) as '***near threatened'*** from the earlier 'endangered'.

- **Red sanders wood fetches huge prices in the international market for its use in making luxury products, musical instruments and medicine**.

> The **IUCN maintains a list—Red list—of flora and fauna species** and categorises them based on their conservation status. At one end of the list is the category 'extinct' and on the other is 'least concern'. According to the IUCN categorisation, species which come under 'critically endangered', 'endangered' and 'vulnerable' categories are considered threatened.

➢ **Khangchendzonga Biosphere Reserve Becomes 11th Biosphere Reserve from India to be Included in the World Network of Biosphere Reserves**

- Khangchendzonga Biosphere Reserve in Sikkim is one of the highest ecosystems in the world, reaching elevations of 1,220 metres above sea-level. It includes a range of ecolines, varying from sub-tropic to Arctic, as well as natural forests in different biomes, that support an immensely rich diversity of forest types and habitats.

- The **core area of the Biosphere Reserve** is a major transboundary Wildlife Protected Area. The southern and central landscape, which makes up 86% of the core area, is situated in the Greater Himalayas. The northern part of the area, which accounts for 14%, is characterized by trans-Himalayan features. Buffer zones are being developed to promote eco-tourism activities.

- **The core zone – Khangchendzonga National Park was designated a World Heritage Site in 2016 under the 'mixed' category**. Many of the mountains, peaks, lakes, caves, rocks, Stupas (shrines) and hot springs function as pilgrimage sites. Over 118 species of the large number of medicinal plants found in Dzongu Valley in north Sikkim are of ethno-medical utility.

> - The UNESCO **World Network of Biosphere Reserves** (**WNBR**) covers internationally designated protected areas, each known as biosphere reserves, which are meant to demonstrate a balanced relationship between people and nature.
> - **Man and the Biosphere Programme** (**MAB**) is an **intergovernmental scientific programme, launched in 1971 by UNESCO**, that aims to establish a scientific basis for the improvement of relationships between

people and their environments.

➤ **Indo-US Indian Ocean Mission Seeks To Solve A Monsoon Mystery**

Indian Ocean Research Vessel (ORV), *Sagar Nidhi,* set out from Chennai as part of an Indo-US expedition seeking to find answers to the vagaries of the Bay of Bengal-fed southwest monsoon, which accounts for 70% of India's annual rainfall.

▶ **Sagar Nidhi** will sail through the Bay of Bengal for a month collecting data on ocean conditions at different depths and locations

▶ The Indo-US expedition wants to find answers about the unpredictability of the south-west monsoon

▶ The project is funded by India's ministry of earth sciences and the US Office of Naval Research

▶ The south-west monsoon has vigorous intra-seasonal variations of dry and weak spells

➤ **Govt. Plans 'ISRO-Like' Ocean Mission**

• The Union Earth Sciences Ministry — tasked with coordinating the exercise — unveiled a blueprint of the **'Deep Ocean Mission (DOM)'.**

• Among the key deliverables to achieve these goals are an offshore desalination plant that will work with tidal energy, and developing a submersible vehicle that can go to a depth of at least 6,000 metres with three people on board.

• India has been allotted a site of 75,000 square kilometres in the Central Indian Ocean Basin (CIOB) by the UN International Sea Bed Authority for exploitation of polymetallic nodules (PMN).

• These are rocks scattered on the seabed containing iron, manganese, nickel and cobalt. "It is envisaged that 10% of recovery of that large reserve can meet the energy requirement of India for the next 100 years.

• The focus will be on technologies for **deep-sea mining, underwater vehicles, and underwater robotics and ocean climate change advisory services, among other aspects**.

➤ **Severe Uranium Contamination In India's Groundwater: Study**

• Scientists have found widespread uranium contamination in groundwater from aquifers across 16 states in India, much above the WHO provisional standard for the country**.**

• The **WHO** has set a **provisional safe drinking water standard of 30 micrograms of uranium per litre for India,** a level that is consistent with US Environmental Protection Agency standards.

• **Despite this, uranium is not yet included in the list of contaminants monitored under the Bureau of Indian Standards' Drinking Water Specifications.**

• Many of India's aquifers are composed of clay, silt and gravel carried down from Himalayan weathering by streams or uranium-rich granitic rocks**. When over-pumping of these aquifers' groundwater occurs and their water levels decline, it induces oxidation conditions that, in turn, enhance uranium enrichment in the shallow groundwater that remains.**

• While the **primary source of uranium is geogenic** (naturally occurring), **anthropogenic (human caused) factors** such as groundwater table decline and **nitrate pollution** may **further enhance uranium mobilisation**.

➤ **Kerala To Get Cyclone Warning Centre**

• The new centre will be set up in **Thiruvananthapuram**. At present, India Meteorological Centre (IMD) has six cyclone warning centres, **four along the east coast at Chennai, Visakhapatnam, Bhubaneswar and Kolkata, and two along the west coast at Ahmedabad and Mumbai.**

- Currently, there are two Doppler radars in the state, at Kochi and Thiruvananthapuram, which cover the central and southern districts, respectively.

- **A cyclone warning centre in Kerala** can boost weather forecasting in the state with another **Doppler radar**.

- Thunderstorms are easily captured by radar. The track can be seen and warning can be issued three hours ahead.

➢ **International Tiger Day: 29 July**

- **Tigers could go extinct within the next decade**. But fortunately, the conservation strategy aimed at doubling them by 2022, Tx2, is starting to work**.**

- **Doubling wild tigers:** In 2010, **Saint Petersburg hosted the Tiger Summit, in which countries committed to** doubling wild tigers by 2022. We are more than a third of the way to 2022.

- **In April 2016, WWF** has announced that **global tiger populations are on the rise** for the **first time in more than 100 years**. 3,890 tigers now exist in the wild globally – up from an estimated 3,200 in 2010.

- Global Tiger Day is celebrated on the 29th of July worldwide, with numerous initiatives mostly organised by the **13 countries home to this feline**: **Bangladesh, India, Burma, Thailand, Cambodia, Indonesia, China, Malaysia, Vietnam, Laos, Bhutan, Nepal, and Russia**.

- The National Tiger Conservation Authority (NTCA) has launched **the M-STrIPES (Monitoring System for Tigers - Intensive Protection and Ecological Status), a mobile monitoring system for forest guards.**

➢ **PARIVESH**

- **PARIVESH (Pro-Active and Responsive facilitation by Interactive, Virtuous and Environmental Single-window Hub)** was launched on the occasion of World Biofuel Day, 10th of August, 2018**.**

- PARIVESH is a **Single-Window Integrated Environmental Management System**, developed in pursuance of the spirit of 'Digital India

- It has been rolled out for online submission, monitoring and management of proposals submitted by Project Proponents to the Ministry of Environment, Forest and Climate Change (MOEFCC), as well as to the State Level Environmental Impact Assessment Authorities (SEIAA), to seek various types of clearances (e.g. Environment, Forest, Wildlife and Coastal Regulation Zone Clearances) from Central, State and district-level authorities.

➢ **National Wildlife Genetic Resource Bank Dedicated To Nation**

- Also known as The Laboratory for the Conservation of Endangered Species **(LaCONES),** it is a dedicated laboratory of the *CSIR-Centre for Cellular and Molecular Biology (CCMB), Hyderabad.*

- Wildlife Genetic Resource Banking (GRB) is the systematic collection and preservation of tissues, sperm, eggs and embryos, genetic material (DNA/RNA).

- **It is one of the promising options for future species management of threatened populations** that **also extends the reproductive life span of individuals beyond their life** and prevents the loss of valuable individuals to the gene pool

- **CCMB-LaCONES is the only laboratory in India that has developed methods for collection and cryopreservation of semen and oocytes** from wildlife and successfully reproducing endangered blackbuck, spotted deer and Nicobar pigeons.

➢ **The International Nitrogen Initiative**

- Indian scientist and academician **Nandula Raghuram** was elected as the Chair of the International Nitrogen Initiative (INI), a global policy making initiative.

- INI is an international program, set up in 2003 under sponsorship of the Scientific Committee on Problems of the Environment (SCOPE) and from the International Geosphere-Biosphere Program (IGBP).

- Its main aims are:

✓ Optimize nitrogen's beneficial role in sustainable food production, and

✓ Minimize nitrogen's negative effects on human health and the environment resulting from food and energy production.

➢ **India Bans Petroleum Coke Import For Use As Fuel**

- India has banned the import of **petcoke for use as fuel**, but shipments for use as feedstock in some industries was allowed.

- Import of Petcoke is allowed for **only cement, limekiln, calcium carbide and gasification industries**, when used as the feedstock or in the manufacturing process on actual user condition

- **India is the world's biggest consumer of petroleum coke, as burning of it releases large amount of carbon dioxide and Sulphur dioxide**, with high Sulphur content, is a dark solid carbon material that emits 11 percent more greenhouse gases than coal,

Petroleum Coke also called Petcoke is a byproduct made when the densest of components of Petroleum or Crude oil are refined to make Fuel. Petcoke is **over 90 percent carbon and emits 5 to 10 percent more carbon dioxide (CO_2)** than **coal on a per-unit-of-energy basis when it is burned**. As petcoke has a higher energy content, petcoke emits between 30 and 80 percent more CO_2 than coal per unit of weight

➢ **Odisha To Showcase Its Biodiversity**

- The Odisha government is setting up a world-class interpretation centre at Dangamal near **Bhitarkanika Park** to showcase its efforts in **protecting crocodiles** and preserving its rich mangrove diversity.

- Bhitarkanika Mangroves is a mangrove wetland in Odisha, covering an area of 650 km in **the Brahmani and Baitarani river deltas. Bhitarkanika Mangroves were designated a Ramsar Wetland of International Importance in 2002.**

- The **Gahirmatha Marine Wildlife Sanctuary**, which bounds the Bhitarkanika Wildlife Sanctuary to the east, was created in September 1997, and encompasses **Gahirmatha Beach** and an adjacent portion of the Bay of Bengal.

- The Bhitarkanika Mangroves are **home to 55 of India's 58 known mangrove species**. The mangroves **harbor one of India's largest populations of saltwater crocodiles, and Gahirmatha Beach,** which **separates the mangroves from the Bay of Bengal**, is the world's most important **nesting beach for olive ridley sea turtles.**

➢ **Commute-Related Pollution: Kolkata Shines Among Megacities**

• The report titled **'The Urban Commute and How it Contributes to Pollution and Energy'** has been compiled by the Centre for Science and Environment (CSE**).** Among cities evaluated by the CSE for emissions caused by urban commuting, **Bhopal** emerges on top with best air quality

• **An analysis of 14 cities in India**, including six mega cities and eight metropolises, on how they fare when it comes to pollution and energy consumption from urban commuting, places **Kolkata as the top-performing megacity.**

➢ **Revival of Cheetah Reintroduction Project**

• **Madhya Pradesh** forest department has written to the National Tiger Conservation Authority (NTCA) to revive the plan to **reintroduce cheetahs in the state's Nauradehi Wildlife Sanctuary.**

• **National Tiger Conservation Authority (NTCA), is nodal agency for the Cheetahs reintroduction plan**

• The country's last spotted feline died in Chhattisgarh in 1947. Later, the cheetah -- which is the fastest land animal -- was *declared extinct* in India in 1952.

• **Nauradehi was found to be the most suitable area for the cheetahs** as its forests are not very dense to restrict the fast movement of the spotted cat. Besides, the prey base for cheetahs is also in abundance at the sanctuary. As per the earlier action plan, around 20 cheetahs were to be trans-located to Nauradehi from Namibia in Africa

• MP houses **six major reserves for the tiger and is often called as the 'tiger state'**. Prominent among them are **Bandhavgarh, Pench and Kanha tiger reserves.**

➢ **India's National Redd+ Strategy**

• In simple terms, **REDD+ means "Reducing Emissions from Deforestation and forest Degradation"**, conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks in developing countries.

• REDD+ aims to achieve climate change mitigation by incentivizing forest conservation. The strategy seeks to address drivers of deforestation and forest degradation and also developing a roadmap for enhancement of forest carbon stocks and achieving sustainable management of forests through REDD+ actions.

• The Strategy builds upon existing national circumstances which have been updated in line with **India's National Action Plan on Climate Change, Green India Mission** and **India's Nationally Determined Contribution (NDC) to UNFCCC**.

• India has communicated in its NDC under Paris Agreement, **that it will capture 2.5 to 3 billion tonnes of Carbon dioxide through additional forest and tree cover by 2030**.

➢ **World's Largest 3D-Printed Coral Reef Installed at Maldives**

• The artificial reef is the result of 24 hours of 3D printing, filling 220 ceramic moulds

• With global warming, bleaching and environmental pollution, it's hoped that 3D printing technology can offer a new way of saving the corals.

• According to The World Wildlife Federation (WWF), **about one-quarter of the world's coral reefs have already suffered damage beyond repair, and the other two-thirds remains under**

serious threat. This comes as a result of factors such as increasing water temperatures, destructive fishing practices, overfishing, careless tourism, poisoning from pollution, coral mining, and erosion caused by human activities.

➢ **In A First In India, Spicejet Operates Biofuel Flight**

• A Bombardier Q400 aircraft, partially using biojet fuel, took off from Dehradun and landed at the airport in the national capital. The SpiceJet flight was powered with a blend of 75% air turbine fuel (ATF) and 25% biojet fuel.

• **Made from Jatropha crop**, the fuel has been developed by the CSIR-Indian Institute of Petroleum (IIP), Dehradun. Biojet fuel is low cost and helps in significantly reducing carbon emissions.

• The advantage of **using biojet fuel as compared to ATF** is that it reduces carbon emissions and enhances fuel efficiency.

➢ **India's 30th Elephant Reserve Has Been Declared In The State Of Nagaland**

• The **Nagaland Government has declared the Singphan Wildlife Sanctuary** as an elephant reserve making it the 30th reserve for jumbos in the country.

• An important reserve in North Eastern States, Singphan Elephant Reserve has huge tracts of forest, strategically located in contiguity with the Abhaypur Reserve Forest of Assam which is frequented by the moving herds of elephants.

> The Indian elephant (*Elephas maximus)* is included in **Schedule I of the Indian Wildlife (Protection) Act, 1972 and in Appendix I of the Convention on International Trade in Endangered Species of Flora and Fauna (CITES).** It occurs in **16 of the 28 states** in the country and is showing an increasing trend across its distributional range.

➢ **NGT Puts Curbs On Western Ghats States**

• **The six Western Ghats States,** including Kerala, have been restrained by the National Green Tribunal (NGT) **from giving environmental clearance** to activities that may adversely impact the Eco sensitive areas of the mountain ranges.

• **The Madhav Gadgil-led Western Ghats Ecology Expert Panel (WGEEP**) had earlier proposed "much larger areas for being included in the eco-sensitive zone, though the **Kasturirangan-led High Level Working Group** also appointed by the MoEF and CC to look into the WGEEP report, had reduced it.

Gadgil Vs Kasturirangan

A Tale of Two Reports

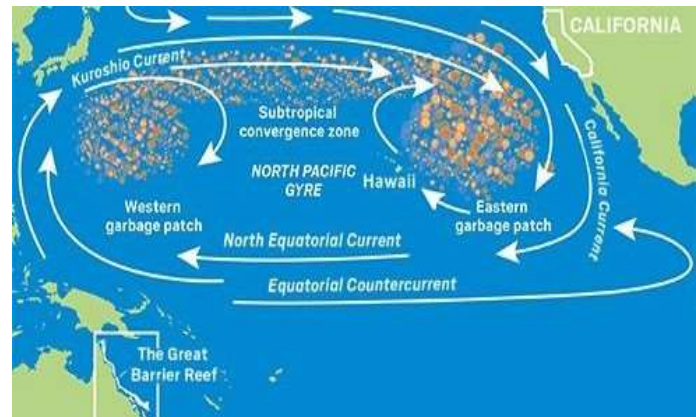|	Gadgil	Kasturirangan
Extent of area to be protected	**1.37** lakh hectares. Entire Western Ghats to be notified as ESA. Three levels of protection in zones depending on ecological richness and diversity	**59,940** hectares. 43% of area of Western Ghats notified as ESA. Removed cash crop plantations and settlements from ESA
Permissible activities in protected areas	Ban on mining activities, use of pesticides and GM crops depending on zones; decommission hydropower projects like in Kerala and Karnataka, gradual shift from plantations to forests	Mining, quarrying, thermal power, buildings over 20,000 sq metres banned in ESA. Stringent conditions on hydropower projects
Governance	Overarching national authority to administer the whole of Western Ghats – called Western Ghat Ecology Authority. There would be state and district-level authorities of the same	Strengthen existing framework of environmental clearances, no new authority, but advocated setting up of a monitoring agency to enforce legislation

➢ **Integrated Development of Wildlife Habitats**

• The **Centrally Sponsored Umbrella Scheme of Integrated Development** consists of Centrally Sponsored Scheme of **Project Tiger (CSS-PT), Development of Wildlife Habitats (CSS-DWH), and Project Elephant (CSS-PE).**

• The schemes would address the human wildlife conflict effectively. Besides, the communities opting for voluntary relocation from the Core/Critical Tiger Habitat (6900 families) would be benefitted under Centrally Sponsored Scheme of Project Tiger (CSS-PT) and 800 families under Centrally Sponsored Scheme of Development of Wildlife Habitat.

➢ **70% Chance Of El Nino Event This Year**

• The **World Meteorological Organisation (WMO**) has forecasted "a 70 percent chance of an El Nino developing by the end of this year"..

• **El Nino is triggered by periodic warming in the eastern Pacific Ocean** which can trigger drought in some regions, heavy rain in others.

• **The WMO is an intergovernmental organization with a membership of 191 Member States and Territories**. It originated from the International Meteorological Organization (IMO), which was founded in 1873. Established by the ratification of the WMO Convention on 23 March 1950, **WMO became the specialised agency of the United Nations for meteorology** (weather and climate), operational hydrology and related geophysical sciences.

➢ **Ocean Cleanup Team Heads To The Pacific**

• Their target is the **eastern Pacific** and what's called the **Great Garbage Patch**, where circular currents have concentrated plastic in one large area.

• The ambitious project by The Ocean Cleanup, a Dutch non-profit group, hopes to clean up half of the infamous garbage patch within five years once all systems are deployed.

➢ **Snow Leopard Spotted**

• Snow leopard was spotted in **Himachal Pradesh's Kinnaur district**. The footage of elusive snow leopards were captured in the **remote areas of Lippa Asrang.**

• **Lippa-Asra wildlife sanctuary in Kinnaur district** is located at a height of around 4,000 metres while snow leopards are usually found between 9,800 and 17,000 feet in high and rugged terrain.

• Snow leopards are given the same protection as the tiger, **listed under Schedule I of the Wildlife (Protection) Act, 1972** – the highest protection afforded to a species. It is listed as **Vulnerable on the IUCN Red List of Threatened Species.**

➢ **India Cooling Action Plan (ICAP)**

• The overarching goal of ICAP is to provide sustainable cooling and thermal comfort for all while securing environmental and socio-economic benefits for the society.

- **India is the first country in world to develop such a document (ICAP),** which addresses cooling requirement across sectors and lists out actions which can help reduce the cooling demand.

- The broad objectives of the India Cooling Action Plan include –

✓ *Reduction of cooling demand across sectors by 20% to 25 % by year 2037-38.*

✓ *Reduction of refrigerant demand by 25% to 30% by year 2037-38.*

✓ *Training of 100,000 service sector technicians by 2022-23 under Pradhan Mantri Kaushal Vikas Yojana*

➢ **World Ozone Day**

- It is Celebrated every year on **16th September.**

- **Theme- Keep Cool and Carry on: The Montreal Protocol.**

- The Montreal Protocol is the only environmental treaty which enjoys *universal ratification of 197 UN numbers countries*. Its implementation has not only led to the phase-out of around 98% of ozone depleting chemicals, but also averted more than 135 billion tonnes of carbon dioxide equivalent emissions. Nearly 2 million cases of skin cancer per year have been averted globally.

- **Ozone Depleting Substances (ODSs) are those substances which deplete the ozone layer** and are widely used in refrigerators, airconditioners, fire extinguishers, in dry cleaning, as solvents for cleaning, electronic equipment and as agricultural fumigants.

- ODS controlled by **Montreal Protocol** include**: Chlorofluorocarbons (CFCs), Halon, Carbon tetrachloride (CCl4), Methyl chloroform (CH3CCl3), Hydrobromofluorocarbons (HBFCs), Hydrochlorofluorocarbons (HCFCs), Methyl bromide (CH3Br), Bromochloromethane (CH2BrCl).**

➢ **WAYU**

- **Wind Augmentation PurifYing Unit (WAYU)** is developed by Council of Scientific and Industrial Research –National Environmental Engineering Research Institute **(CSIR-**NEERI) as a part of Technology Development Project being funded by Department of Science and Technology.

- **The device works on two principles mainly Wind generation for dilution of air pollutants and Active Pollutants removal**.

➢ **More River Stretches Are Critically Polluted**

- In its 2015 report, the Central Pollution Control Board (CPCB) identified 302 polluted stretches on **275 rivers, spanning 28 States and six Union Territories.**

- **Mithi among the worst -** The most significant stretches of pollution highlighted by the CPCB assessment (which is yet to be published) include the Mithi river **— from Powai to Dharavi —** with a BOD (Biochemical Oxygen Demand) of 250 mg/l**; the Godavari —** from Someshwar to Rahed — with a BOD of 5.0-80 mg/l**; the Sabarmati —** Kheroj to Vautha — with a BOD of 4.0-147 mg/l**; and the Hindon** — Saharanpur to Ghaziabad — with a BOD of 48-120 mg/l**.**

> Biochemical Oxygen Demand (BOD, also called Biological Oxygen Demand) is the amount of **dissolved oxygen needed (i.e. demanded) by aerobic biological organisms to break down organic material** present in a given water sample at certain temperature over a specific time period. **BOD is similar in function to chemical oxygen demand (COD)**, in that **both measure the amount of organic compounds in water. However, COD is**

less specific, since it measures everything that can be chemically oxidized, rather than just levels of biodegradable organic matter.

➢ **PM Narendra Modi Gets Top United Nations Environmental Honour**

• Mr Modi was awarded the **United Nations' Champions of the Earth Award** for the year 2018.

• The United Nations recognised Modi with its highest environmental honour in the **policy leadership category** for his extensive efforts to **'Beat Plastic Pollution'-** *including an ambitious pledge to eliminate all single-use plastic in the country by 2022.*

• **President of France, Emmanuel Macron** has also been awarded in the same category for his work on the Global Pact for the Environment**.**

• **Cochin International Airport** was also awarded for its leadership in use of sustainable energy in the category of entrepreneurial vision. The airport is **world's first fully solar-powered airport.**

The Champions of the Earth award is the United Nations highest environmental honour recognizing visionary people and organisations all over the world that exemplify leadership and advocate action on sustainable development, climate change and a life of dignity for all. **It was launched in 2005 and is awarded by UNEP**. Past Indians who won it include: **Afroz Shah, who led the world's largest beach cleanup (2016).**

➢ **IOWave16**

• India along with 23 other countries participated in a large-scale tsunami simulation exercise organized by the **Intergovernmental Oceanographic Commission (IOC) of UNESCO** on 8 Sept'.

• The **tsunami mock drill,** known as the IOWave16, will test the standard operating procedures of the Indian Ocean Tsunami Warning and Mitigation System and is designed to assess the effectiveness of communication flows between operational centres and stakeholders.

➢ **What Caused The Floods In Kerala?**

• A combination of four factors led to extreme flooding across Kerala this year, a study says. **Above normal seasonal (May-August) rainfall, extreme rainfall events occurring almost across the State during the season, over 90% reservoir storage even before the onset of extreme rainfall events, and finally the unprecedented extreme rainfall in catchment areas of major reservoirs in State led to the disaster.**

• The widespread damage caused by recent floods in Kerala can be attributed to the **'hungry water'** effect' **caused by the surge of sediment-starved water from the upstream reaches of a river.**

• The dam ponds the water and retains most of the sediment. **The water subsequently released is typically almost devoid of sediment; therefore, it is "hungry water."** This **water will have the tendency to pick up sediment as it moves downstream.**

➢ **A Real-Time Landslide Warning System Has Been Set Up In The Sikkim-Darjeeling Belt Of The North-Eastern Himalayas**

• The warning system consists of over 200 sensors that can measure geophysical and hydrological parameters like rainfall, pore pressure and seismic activities.

• **Landslides are triggered by natural causes like vibrations from earthquakes and the build-up of water pressure between soil layers due to prolonged rainfall or seepage**.

- In recent decades, **man-made causes** have become significant in triggering landslides, including **removal of vegetation from the slopes, interference with natural drainage, leaking water or sewer pipes**, modification of slopes by the construction of roads, railways, buildings etc.

➢ **MoEFCC's National Action Plan for Conservation of Migratory Birds and their Habitats along Central Asian Flyway (CAF) for the period 2018-23**

- The overall longer-term goal of the National Action Plan is to arrest population decline and secure habitats of migratory bird species**.**

- **Central Asian Flyway (CAF)**, one among the nine flyways in the world, encompasses overlapping migration routes over 30 countries for different water birds linking their northern most breeding grounds in Russia (Siberia) to the southernmost non-breeding (wintering) grounds in West and South Asia, the Maldives and the British Indian Ocean Territory.

- The Convention on the **Conservation of Migratory Species** of Wild **Animals** -- more commonly abbreviated to just the Convention on Migratory Species (CMS) or the **Bonn Convention and CMS COP is known as Global Wildlife conferenc**e—aims to conserve terrestrial, marine and avian **migratory species** throughout their range.

➢ **Delhi's Air Quality worsens**

- Air quality in the national capital region has deteriorated as **burning of paddy stubble** by farmers in Punjab and Haryana intensified.

- Farmers in Punjab and Haryana usually burn the paddy straw after combine harvesters leave a 7-8 inch stubble on the field following harvest, and farmers have to prepare the field for planting of wheat crop in two to three weeks.

- As the straw cannot be fed to cattle, the way out is on-field management of stubble by using machines such as straw management system, mulchers, rotavators and happy seeders.

- The central and state **governments have announced 50-80% subsidy on purchase of these machineries but have seen limited success**. The machinery is very expensive despite the subsidy and manufacturers raised prices after these subsidies were announced.
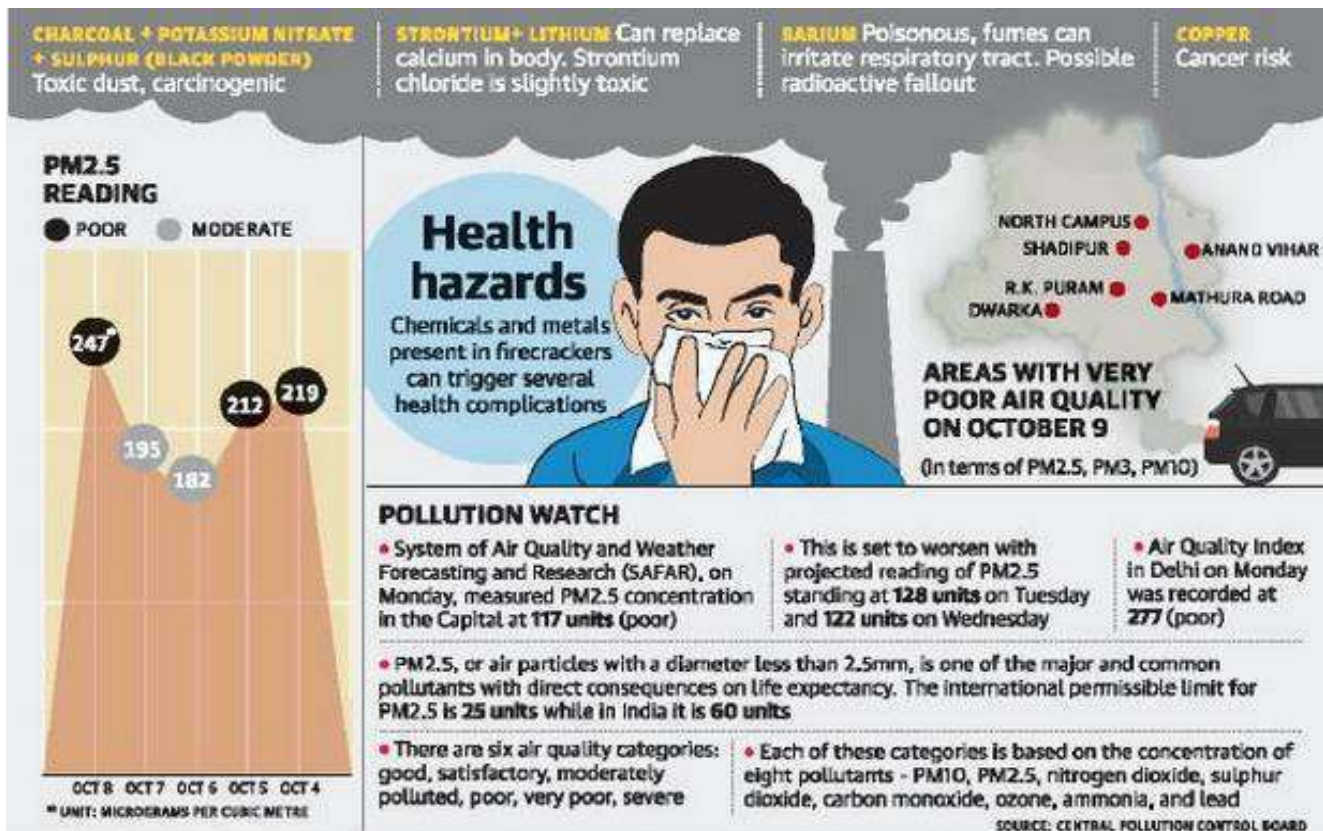
➢ **WHO's First Global Conference On Air Pollution And Health**

- The first Global Conference on Air Pollution and Health was recently held at the World Health Organisation's headquarters in **Geneva.**

- The conference was held in collaboration with UN Environment, World Meteorological Organization (WMO), the Secretariat of the UN Framework Convention on Climate Change (UNFCCC), the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC) and the United Nations Economic Commission for Europe (UNECE).

- **A WHO report titled** "*Air Pollution And Child Health: Prescribing Clean Air*"**,** launched on the eve of the conference, examines the heavy toll of both ambient (outside) and household air pollution on the health of the world's children, particularly in low and middle-income countries.

➢ **SC Decision On Use Of Firecrackers**

- The Supreme Court has struck a balance between the interests of the firecracker industry and the right to public health, **allowing the manufacture and sale of only green and reduced emission or improved crackers, while banning those that are loud and toxic to man, animal and the environment.**

- The recent emphasis on scientifically improving firecracker composition holds great promise. **The development of *green crackers* with lower emissions and producing water particles that suppress dust and *electronic crackers at CSIR labs* must be adopted by the industry.**

➢ **CSIR Develops Less Polluting Firecrackers**

- These crackers have been named as safe water releaser **(SWAS), safe minimal aluminium (SAFAL) and safe thermite cracker (STAR).**

- It has unique property of releasing water vapour and /or air as dust suppressant and diluents for gaseous emissions and matching performance in sound with conventional crackers.

- **SWAS crackers eliminates usage of Potassium nitrate (KNO3)** and **Sulphur** with consequent reduction in particulate matter (30-35%) SO2 and NOx. **STAR** eliminates usage of KNO3 and S with consequent reduction in particulate matter (35-40%),SO2 and NOx.

➢ **Rafting Expedition "Mission Gange"**

• **National Mission for Clean Ganga (NMCG)** has partnered with **Tata Steel Adventure Foundation (TSAF)** to launch a month-long rafting expedition of a team of 40 members which will be **led by the first Indian woman to scale Mount Everest Ms. Bachendri Pal.**

• The expedition encompasses 8 major towns including Bijnor, Farrukhabad, Kanpur, Allahabad,Varanasi and Buxar. It concluded in Patna in Bihar on 30th October.

• During the month-long expedition, the team will stop at all major locations and carry out cleaning drives in coordination with NMCG stakeholders like *Ganga Vichar Manch, Ganga Praharis, District Ganga Committees, local voluntary organizations and people from all walks of life.*

➢ **What Is Killing Gujarat's Lions**

• 26-member strong pride of the endangered Asiatic lions in Gujarat. According to the State Forest Department, of the 23 deaths, four lions died of CDV, and 17 were killed by a tick-borne infection.

• **184 Lions have died in Gujarat since 2006**. Recently the lions succumbed to the deadly infection of **canine distemper virus (CDV) and tick-borne babesiosis**.

• There is **a census of lions in Gir every five years**.

• **Canine Distemper is a virus that affects a Dog's gastrointestinal, respiratory and central nervous systems** as well as the conjunctival membranes of the eye.

• **Babesiosis:** Caused by Babesia, an apicomplexan parasite that infects red blood cells, transmitted by ticks. Symptoms include dullness, weakness, inappetence, mild paresis of hind quarters.

• The Gujarat government has been resisting their relocation to the **Kuno Wildlife Sanctuary, also known as Palpur-Kuno,** in Madhya Pradesh -- as ordered by the Supreme Court way back in 2013.

➢ **Windmills Not So Green For Wildlife**

• Windmills are seen as a source of green energy, but researchers say they pose a threat to wildlife in forests through collisions and noise.

• **The noise levels near windmills go up to 85 decibels (dB), the equivalent of large trucks. The drone of a turbine, which operates day and night, is above 70dB**. By comparison, **noise in urban areas is 55 dB** and even in industrial areas, is lower at 75dB. Ambient noise in forests is less than 40 dB.

➢ **Western Ghats Is Home To The Eurasian Otter**

• It has taken more than 70 years to confirm **the presence of the elusive Eurasian otter — one of the least-known of India's three otter species — in the Western Ghats.**

• While the species is widespread across Europe, northern Africa and several south Asian countries, it is not as frequently sighted as smooth-coated or small-clawed otters in India.

• Though the Eurasian otter has been recorded historically from the Western Ghats (Coorg in Karnataka and Tamil Nadu's Nilgiri and Palani hill ranges), this is the first photographic and genetic confirmation of its presence here.

➢ **Centre Sets 'Minimum River Flows' For The Ganga**

• **In a first**, the Union government has mandated the **minimum quantity of water** — or **ecological flow as it's called in scientific circles** — that various stretches of the Ganga must necessarily have all through the year.

• **Minimum River Flow or Minimum Environmental Flow or E-flow** is a regime of flow in a river that mimics the natural pattern. It refers to the water considered sufficient for protecting the structure and function of an ecosystem and its dependent species.

• **Environmental flows** describe **the quantity, timing, and quality** of **water flows** required to sustain freshwater and estuarine ecosystems and the human livelihoods and well-being that depend on these ecosystems.

➢ **Prakriti**

• Two MoU were signed by Indian Council of Forestry Research and Education (ICFRE), Dehradun, with Navodaya Vidyalaya Samiti (NVS) and Kendriya Vidyalaya Sangathan (KVS).

• The MoUs have been signed to launch the programme **"PRAKRITI"** with the objective to promote awareness about forests and environment, to stimulate interest among the students of NVS and KVS in maintaining a balanced environment and for acquiring skills that reflect care and protection towards forests, environment and society.

• **ICFRE is an autonomous Council** under the Ministry of Environment, Forest and Climate Change**. ICFRE, through its nine Institutes and five Centres located across the country, is guiding, promoting and coordinating forestry research, extension and education at the national level.**

➢ **Unclogging Our Oceans**

• **The problem of ghost gear (any fishing equipment that has been lost, discarded or abandoned in water bodies)** has grown from fishing fallout that people had not heard of to one that is now difficult to ignore.

• Between 2011 and 2018 alone, **the Olive Ridley Project,** a U.K. registered charity that removes ghost nets and protects sea turtles**,** recorded 601 sea turtles being entangled in ghost gear near the Maldives, of which 528 were Olive Ridleys**.**

• Ghost nets are often **'ghost fishers'**. Ocean currents carry them for thousands of km across the ocean floor, ensnaring, injuring and drowning marine life and damaging live corals along the way.

➢ **STAPCOR – 2018**

• **Theme: "Reef for Life"**

• The International Conference on **Status and Protection of Coral Reefs** (STAPCOR – 2018) was held at **Bangaram coral Island of Union Territory of Lakshadweep.**

• A coral reef is an underwater ecosystem characterized by reef-building corals. Reefs are formed of colonies of coral polyps held together by calcium carbonate. Most coral reefs are built from stony corals, whose polyps cluster in groups.

• The effect of climate change and global warming along with El-Nino on the corals has lead to heavy bleaching internationally during the year 1998. **This led to the foundation of STAPCOR with a**

decision to have a international conference in every 10 years to review the status and progress of coral reefs all over the world.
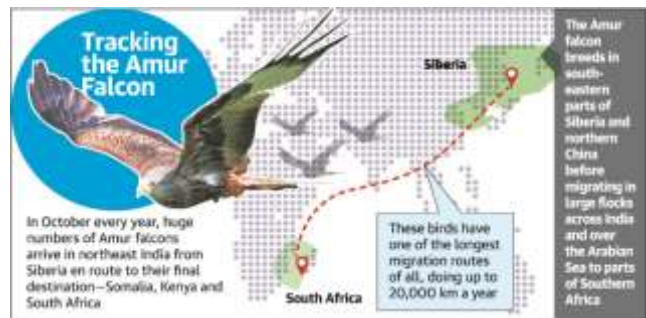
- **The first International Year Of Reef (IYOR) was designated in 1997 i**n response to the increasing threats on coral reefs and associated ecosystems. **2007 was designated as the second IYOR. 2018 has been designated as 3rd decadal International Year Of Reef.**

- Lakshadweep will establish an International Atoll Research Centre, with world class infrastructures for scientific research on corals.

➤ **Citizen-Science Repository of Indian Mammals**

- Scientists and researchers from the National Centre for Biological Sciences (NCBS) in Bangalore have come up with a **new citizen-science repository on Indian mammals, called Mammals of India (MaOI),** which is an online, peer- reviewed, freely-accessible portal.

- The website provides an opportunity to any person to upload geotagged photographic observations about mammals with information on habitat age of the observed individual, which would be verified by experts and then posted on the website.

➤ **Siberian Visitors in Assam-Meghalaya Border**

- **While Doyang Lake in Nagaland's Wokha district** is better known as a stopover for the Amur falcons during their annual migration from their breeding grounds in Mongolia and northern China to warmer South Africa, **a flock has been seen since 2010 in Umru, which Assam claims falls in its territory.**

- IUCN status: **Least concerned.**

➤ **India Soil Diversity in Danger**

- According to the **Global Soil Biodiversity Atlas prepared by the World Wide Fund for Nature**, India's soil biodiversity is in grave peril.

- **The WWF's 'risk index' for the globe** — indicating threats from loss of above-ground diversity, pollution and nutrient over-loading, over-grazing, intensive agriculture, fire, soil erosion, desertification and climate change — shows India among countries whose soil biodiversity faces the highest level of risk.

- **Soil biodiversity encompasses the presence of micro-organisms, micro-fauna** (nematodes and tardigrades for example), and **macro-fauna** (ants, termites and earthworms).

- The **two key drivers of biodiversity** loss were the **over exploitation of natural resources** and **agriculture**, the **WWF added in its Living Planet report.**

➤ **Banni's Bane: Drought in Great Rann of Kutch**

- Situated near the Great Rann of Kutch, Banni, **the largest grassland of Asia,** spread over 2,717 sq.km, is in the grip of a severe drought as winter sets in.

- **Banni,** divided into eastern and western parts, is separated by NH 341, which leads to the India-Pakistan International Border. The **Maldharis** (ethnic tribal pastoralists) are also leaving.

- Even the bird sanctuary at Chari-dhand, which boasts migratory birds such as flamingo, is facing an acute water shortage. **Chari Dhand** has been identified as one of the best area for **reintroduction of Cheetah** by Wild Life Institute of India as the area includes Kala Dungar or Black hills where large number of jackals are present.

- The land of Banni is formed out of **ocean clay**, so it includes an element of salt from very beginning. This land is formed out of alluvial and clayey sand.

➢ **IPCC (Intergovernmental Panel On Climate Change) Report On The Health Of World Ocean**

- For each of the last 25 years, oceans had absorbed heat energy equivalent to 150 times the amount of electricity mankind produces annually. That is 60% higher than what previous studies showed.

- The world's oceans have absorbed 90% of the temperature rise caused by man-made carbon emissions.

- The **International Union for Conservation of Nature** (**IUCN**) is an international organization working in the field of nature conservation and sustainable use of natural resources.

- IUCN was established in 1948. It was previously called the **International Union for the Protection of Nature** (1948–1956) and the **World Conservation Union** (1990–2008).

- The organization is best known to the wider public for compiling and **publishing the IUCN Red List of Threatened Species,** which assesses the conservation status of species worldwide.

➢ **Earth's Water a Result of Asteroid Impacts and Leftover Gas From Sun's Birth**

- According to a recent study, *Earth's global ocean water may have originated from both asteroidal material and gas left over from the formation of the Sun*.

- The study notes that since **comets contain a lot of ices, it could have supplied some water. Asteroids**, which are **not as water-rich yet still plentiful, could be a source as well**.

- The early ocean known as Arabia was formed 4 billion years ago on Mars, while the Deuteronilus ocean was formed 3.6 billion years ago. Both coexisted with the massive volcanic province Tharsis, located on the unseen side of the planet, which may have helped support the existence of liquid water; the water is now gone, perhaps frozen underground and partially lost to space, while the ancient seabed is known as the northern plains.

- **The study challenges widely-accepted ideas about hydrogen in Earth's water by suggesting the element partially came from clouds of dust and gas remaining after the Sun's formation**, called the solar nebula.

➢ **Recovery of Ozone Layer**

- A recent study by NASA has **confirmed the recovery of the ozone layer due to the absence of chlorine from Chlorofluorocarbon (CFC) in the atmosphere**.

- The study has confirmed the phenomenon by mapping the chemical composition of the atmosphere. The study revealed that **chlorine levels declined by 0.8% each year between 2005 and 2016** and speculates that it could be the effect of the worldwide ban on the use of CFC. Previous research had hinted at the decrease in the depletion of ozone layer. **Scientists believe that the ozone layer would fully recover by 2080.**

- **A layer of ozone envelops the Earth and keeps damaging ultraviolet, or UV, radiation from reaching living things on the planet's surface. The ozone layer exists mainly in the stratosphere**, a layer of the atmosphere that reaches from 10 to 50 kilometers (about 6 to 30 miles) above the Earth's surface.

➢ **UNESCO Asia - Pacific Award for Cultural Heritage Conservation**

- Launched in 2000, UNESCO Asia-Pacific awards for cultural heritage conservation programme is aimed at acknowledging the efforts taken to restore and conserve historical structures without affecting their heritage value in the region comprising 48 countries.

- **The awards are classified under four categories** — Award of Excellence, Awards of Distinction, Awards of Merit, and Award for New Design in Heritage Context.

- **They are being given to encourage** the efforts of all stakeholders and the public in conserving and promoting monuments and religious institutes with rich heritage in the Asia-Pacific region.

Various Awardees:

- **Award of Distinction***:* Restoration of LAMO Center from a state of partial ruin in Ladakh.

- **Honourable Mention***:* Rejuvenation of iconic Rajabai Clock Tower and Ruttonsee Muljee Jetha Fountain in Mumbai, along with a project in China.

- **Award of Excellence***:* Shijo-cho Ofune-hoko Float Machiya, of Kyoto, Japan.

- **New Design in Heritage Contexts***:* Kaomai Estate 1955, Chiang Mai (Thailand) and Harts Mill, Port Adelaide, (Australia).

➢ **Elephant Corridor**

- National Green Tribunal (NGT) has asked Ministry of Environment, Forests and Climate Change (MoEF&CC) to consider declaring all elephant corridors in the country as eco-sensitive zones.

- The Environment Protection Act*,* 1986 ***does not mention the word "Eco-sensitive Zones"***.

- The **section *3(2)(v)*** of the Act, says that Central Government can restrict areas in which any industries, operations or processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards

- Besides the **section *5 (1)*** of this act says that central government can prohibit or restrict the location of industries and carrying on certain operations or processes on the basis of considerations like the biological diversity of an area, maximum allowable limits of concentration of pollutants for an area, environmentally compatible land use, and proximity to protected areas.

- The above two clauses have been effectively used by the government to declare Eco-Sensitive Zones or Ecologically Fragile Areas (EFA).

- The guidelines lay out the criteria based on which areas can be declared as ESAs. These include **Species Based (Endemism, Rarity etc), Ecosystem Based (sacred groves, frontier forests etc) and Geomorphologic feature based (uninhabited islands, origins of rivers etc).**

➢ **New Species of Indian Horned Frogs From Himalayan Regions**

- Scientists have discovered four new species of **Indian horned frogs** from Himalayan regions of Northeast India.

- Horned frogs get their name from fleshy horn-like projection on upper eyelids of some species. They were discovered in the **forests of Meghalaya and Arunachal Pradesh.**

- Scientists have named them as **Himalayan horned frog (Megophrys himalayana)**, Garo white-lipped horned frog **(Megophrys oreocrypta)**; Yellow spotted white-lipped horned frog **(Megophrys flavipunctata) and Giant Himalayan horned frog (Megophrys periosa).**

➢ **Point Calimere Wildlife Sanctuary**

- Point Calimere Wildlife Sanctuary in Vedaranyam Range has been closed for a week in view of water-logging caused by a heavy spell of rainfall. A study notes that the water quality at the Point Calimere Wildlife Sanctuary might be unsafe for avifauna to feed and breed.

- **It is located in Nagapattinam district of Tamil Nadu** spreads across an area of 30 sq.km and comprises sandy coastal, saline swamps and thorn scrub forests around the backwater.

- It is a protected area and **a Ramsar site**.

- **Blackbuck (Antilope Cervicapra)** is the flagship species of sanctuary & is **a sanctuary for falmingoes.**

- **It harbors the single-largest stretch of the unique dry-evergreen forest in the country** besides open grasslands and tidal mudflats is of interest to tourists.

➢ **Global Stocktake**

- Ahead of the UN climate conference in Poland next month, **BASIC (Brazil, South Africa, India and China) group** recently met to put pressure on developed countries to meet pre-2020 climate efforts, and to "progressively" and "substantially" scale up their financial support for future action.

- **'Global stocktake'** refers to *a proposed five-yearly review of the impact of countries' climate change actions*. Under the Paris Agreement, every country must present a climate action plan in five-yearly cycles.

- *Under the Paris Agreement, the first global stocktake will happen in 2023*. It will assess whether the net result of the climate actions being taken was consistent with the goal of keeping the increase in global average temperature **from pre-industrial times to within 2 degree Celsius.**

➢ **ACROSS Scheme**

- The Cabinet Committee has approved continuation of the nine sub-schemes of the umbrella scheme **"Atmosphere & Climate Research-Modelling Observing Systems & Services (ACROSS)"** during 2017-2020.

- ACROSS scheme pertains to the atmospheric science programs of the Ministry of Earth Sciences.

- It addresses different aspects of weather and climate services, which includes warnings for cyclone, storm surges, heat waves, thunderstorms etc.

- Each of these aspects is incorporated as nine sub-schemes under the umbrella scheme "ACROSS" and is implemented in an integrated.

➢ **India Get UN Environment Awards**

- United Nation Environment has awarded **Wildlife Crime Control Bureau (WCCB),** Ministry of Environment, Forest and Climate Change, Government of India with **Asia Environment**

Enforcement Awards 2018 for excellent work done by the Bureau **in combating transboundary environmental crime**. WCCB has been conferred this award in *Innovation category*.

- WCCB has adopted innovative enforcement techniques that have dramatically increased enforcement of transboundary environmental crimes in India.

- Notably it has developed an **online Wildlife Crime Database Management System** to get real time data in order to help analyze trends in crime and devise effective measures to prevent and detect wildlife crimes across India.

- In order to involve the public in the fight against wildlife crime, WCCB has also developed **a scheme to enroll willing persons as WCCB Volunteers**.

➢ **Climate Vulnerable Forum (CVF)**

- **Climate Vulnerable Forum meeting** is being held in Marshall Islands. **This is the first entirely online Heads of Government level intergovernmental meeting**.

- Leaders at the **CVF** have called on world's governments to raise the ambition of their climate targets by 2020 in order to save vulnerable nations threatened by warming beyond 1.5 °C.

- The CVF was founded by Maldives govt before 2009 United Nations Climate Change Conference in Copenhagen, which sought to increase awareness of countries considered vulnerable.

- **Afghanistan, Nepal and Bhutan are its members, whereas India is one of the observer states.**

➢ **Titli Cyclone is ' Rarest of Rare '**

- The **Regional Integrated Multi-Hazard Early Warning System (RIMES) for Africa and Asia** has termed 'Titli', the severe cyclonic storm that devastated Odisha in October, as 'rarest cyclone'.

- **Titli cyclone is the rarest of rare in terms of its characteristics** such as **recurvature after landfall and retaining its destructive potential after landfall and recurvature away from the coastal areas for more than two days.**

➢ **ZSI Report on Andaman & Nicobar Islands Fauna**

- A recent publication by the Zoological Survey of India (ZSI) titled *Faunal Diversity of Biogeographic Zones: Islands of India* has for the first time come up with a database of all faunal species found on the Andaman and Nicobar Islands, putting the number at 11,009.

- The documentation proves that the islands, comprising only 0.25% of India's geographical area, are home to more than 10% of the country's fauna species. It has 11,009 species.

- *Endemic species:* The **Narcondam hornbill**, its habitat restricted to a lone island; the **Nicobar megapode**, a bird that builds nests on the ground; the **Nicobar treeshrew**, a small mole-like mammal; the **Long-tailed Nicobar macaque**, and the **Andaman day gecko**, are among the 1,067 endemic faunal species found only on the Andaman and Nicobar Islands and nowhere else.

- *Among birds, endemism is quite high*, with 36 among 344 species of birds found only on the islands.

- *Endemic reptiles:* Eight species of amphibians and 23 species of reptiles are endemic to the islands, and thus are at high risk of being threatened**.**

➢ **Scientist Mull Stratospheric barrier to curb global warming**

- Scientists have found that ***spraying sun-dimming chemicals high above the earth to slow global warming could be remarkably inexpensive costing about $2.25 billion a year over a 15-year period***.

- This geo-engineering technique known as ***stratospheric aerosol injection (SAI)*** could limit rising temperatures that are causing climate change.

Stratospheric Aerosol Injection (SAI)
Under SAI delivery of precursor sulfide gases such as sulfuric acid, hydrogen sulfide (H2S) or sulfur dioxide (SO2) are sprayed by artillery, aircraft and balloons.

➢ **Fly Ash**

- The National Green Tribunal (NGT) has imposed penalties of up to ₹5 crore on thermal power plants that have not fully disposed of the fly ash they generated.

- ***Fly ash is a major source of PM 2.5*** (fine, respirable pollution particles) in summer. It becomes ***air borne***, and gets transported to a radius of 10 to 20 kms. It ***can settle on water and other surfaces***. Fly ash ***contains heavy metals*** from coal**, a large amount of PM 2.5 and black carbon (BC)**. Proper disposal of fly ash is still not happening in many places.

What Can Be Done

✓ Fly ash, ***the end product of combustion during the process of power generation in the coal based thermal power plants***, is a proven resource material for many applications of construction industries and currently is being utilized in manufacturing of Portland Cement, bricks/blocks/tiles manufacturing, road embankment construction and low lying area development, etc.

✓ Besides, there is a need to prevent the ash from coming to the power plant by washing the coal at its place of origin. The government should also come out with a policy to encourage fly ash use in cement plant.

➢ **Biggest Coral Reseeding Project Launches On Great Barriers Reef**

- Scientists have launched the largest-ever attempt to regenerate coral on the endangered Great Barrier Reef by harvesting millions of the creatures' eggs and sperm during their annual spawning.

- The plan is to grow coral larvae from the harvested eggs and return these to areas of the reef which have been badly damaged by climate-related coral bleaching.

- Coral along large swathes of the 2,300-kilometre reef have been killed by rising sea temperatures linked to climate change, leaving behind skeletal remains in a process known as coral bleaching.

➢ **Hog Deer**

- Indian scientists have discovered in India **an endangered sub-species of hog deer (Axis porcinus annamiticus), earlier believed to be confined to the eastern part of central Thailand**.

- Researchers reported the presence of ***a small population of hog deer in Keibul Lamjao National Park (KLNP), Manipur***. The population genetically resembles A. p. annamiticus. The study indicates that the western limit of hog deer is Manipur; not central Thailand as believed..

- The hog deer or Pada is ***an endangered species in the IUCN Red List*** and is ***protected under Schedule I of the Indian Wild Life (Protection) Act, 1972***. The species has lost ground in most of its distribution range. A small and isolated population of under 250 was reported from Cambodia.

➢ **Delhi to roll out hydrogen-enriched CNG buses next year**

• Delhi will be the first city in India to roll out **hydrogen-enriched CNG (HCNG)** buses for public transport next year onwards.

• **The Delhi government has tied up with Indian Oil Corporation Limited (IOCL**), a public sector undertaking, to induct 50 HCNG-fuelled buses on a trial basis.

• The best thing about HCNG is that it does not require any modification of the engine or retrofitment, only some calibration is required in the bus..

• **HCNG** is a vehicle fuel which is a **blend of compressed natural gas and hydrogen**, **typically 8-50% hydrogen by volume.**

• **The thermal efficiency of both Natural gas and HCNG increases with increase in load** which makes it an ideal fuel for high load applications and heavy-duty vehicles.

➢ **Science-based Targets**

• Science Based Targets, **an initiative to drive corporate climate actions globally,** has given companies a clear roadmap for how much they need to shrink their carbon footprint to realise the Paris Agreement goals.

• Unique to this initiative is the criterion that companies need to commit to setting supply chain or 'scope 3' targets. **That is, if more than 40 % of a company's emissions occur in its supply chain**, then the company has to commit to reducing those emissions as well as its direct emissions.

• **Sixteen Indian companies that have committed to set science-based targets** and secured themselves competitive advantage in the transition include Aditya Birla Chemicals, Banka BioLoo, Hindustan Zinc, Wipro and 12 Mahindra group companies

• On March 14, Mahindra Sanyo Steel became the first Indian company to set its science-based target. Globally, it is also the first steel company to set a target.

➢ **INSPIRE 2018**

• The second edition of International Symposium to Promote Innovation & Research in Energy Efficiency (INSPIRE) is being held in New Delhi. **The symposium will focus on enhancing grid management, e-Mobility, financial instruments and technologies for energy efficiency in India.**

• INSPIRE 2018 has been organised in collaboration with the Bureau of Energy Efficiency (BEE), The Energy & Resources Institute (TERI), Asian Development Bank (ADB), the United Nations Environment Program (UNEP), and the Administrative Staff College of India (ASCI).

• The event is bringing together policy-makers, influencers, innovators, thought leaders, researchers, leading energy-efficient companies, government agencies, business leaders and other stakeholders to deliberate on key energy policies, market transformation strategies, and sustainable business models that will help leverage the full potential of energy efficiency and bring its multiple co-benefits to the fore.

➢ **Smart Meters Have The Potential To Improve Billing Efficiency**

• **A smart meter is an electronic device that records consumption of electric energy and communicates the information to the electricity supplier for monitoring and billing.**

- Smart meters enable two-way communication between the meter and the central system. Communications from the meter to the network may be wireless or via fixed wired connections such as power line carrier (PLC**).**

➢ **Power Ministry Recommends 24°C As The Default Setting For ACs**

- It also suggested that the manufacturers carry out labelling indicating the optimum temperature setting for the **benefit of consumers, both from the financial and health point of view.** These **temperatures setting will be in the range of 24-26 degree Celsius**.

- The targeted commercial buildings will include airports, hotels, shopping malls, offices and government buildings. This initiative is launched on a voluntary basis to increase awareness and encourage consumers to adopt the guidelines

> The Energy Conservation Act (EC Act) was enacted in 2001 with the goal of reducing energy intensity of Indian economy. Bureau of Energy Efficiency (BEE) was set up as the statutory body on 1st March 2002 at the central level to facilitate the implementation of the EC Act. The Act provides regulatory mandate for: standards & labelling of equipment and appliances; energy conservation building codes for commercial buildings; and energy consumption norms for energy intensive industries.

➢ **Advanced Motor Fuels Technology Collaboration Programme**

- The Union Cabinet has been apprised of India joining as Member of Advanced Motor Fuels Technology Collaboration Programme (AMF TCP) under International Energy Agency (IEA). The primary goal of joining AMF TCP by India to bring down emissions and achieve higher fuel efficiency in transport sector.

- AMF TCP is *an international platform under the framework of International Energy Agency (IEA)* for co-operation among countries to promote cleaner and more energy efficient fuels & vehicle technologies.

- India's association with AMF TCP will help in furthering its efforts in identification & deployment of suitable fuels for transport sector for higher efficiency and lesser emissions.

IT AND ICT

➢ **Research On Blockchain Tech**

• **NITI Aayog** and fertiliser major **Gujarat Narmada Valley Fertilizers & Chemicals Limited (GNFC)** have entered into an agreement to undertake joint research and exchange and disseminate learnings **to use Blockchain Technology for fertiliser subsidy management.**

• With adoption of Blockchain Technology, it is expected that the distribution will become effective and efficient, and subsidy transfer would be automated and made real time.

> **The very primitive form of the blockchain was the hash tree, also known as a Merkle tree**. In 1991, the Merkle tree was used to create a "secured chain of blocks" — a series of data records, each connected to the one before it. The newest record in this chain would contain the history of the entire chain. And thus, the blockchain was created. In 2008, **Satoshi Nakamato** conceptualized the distributed blockchain. It would contain **a secure history** of data exchanges, utilize a **peer-to-peer network** to time stamp and **verify each exchange**, & could be **managed autonomously without a central authority**. This became the backbone of Bitcoin

How Does Blockchain Work?

1. **Blockchain keeps a record of all data exchanges** — this record is referred to as a "**ledger**" in the cryptocurrency world, and each data exchange is a "**transaction**". Every verified transaction is added to the ledger as a "**block**"
2. **It utilizes a distributed system to verify each transaction** — a peer-to-peer network of nodes.
3. Once signed and verified, the new transaction is added to the blockchain and *can not be altered.*

➢ **MoU on Block Chain Technology**

• The Union Cabinet has approved a Memorandum of Understanding (MoU) on collaborative research in the field of blockchain and distributed ledger technologies.

• The cabinet's approval will enable **India's Export-Import (EXIM) Bank** to launch research efforts in these fields with the participation of representative banks from BRICS financial bloc.

• The MOU, which is a cooperative initiative under the BRICS Interbank Cooperation Mechanism, aims to **foster better understanding of DLT (**distributed ledger technology*)* and define areas where the technology can be deployed to **improve operational efficiency**.

> The **Xiamen Declaration** signed in **China on digital economy by the BRICS leaders** had highlighted the importance of the digital economy and how the **BRICS nations** could leverage the thriving and dynamic digital economy that will foster global economic development and benefit everyone.

➢ **World First AI News Anchor Debuts In China**

• **The world's first artificial intelligence (AI) news anchor made "his" debut** at the ongoing fifth World Internet Conference in east China's Zhejiang province.

• The AI news anchor has a male image with a voice, facial expressions and actions of a real person. He learns from live broadcasting videos by himself and can read texts as naturally as a professional news anchor.

• The AI news anchor was jointly developed by Xinhua and the Chinese search engine company, Sogou.com.

➢ **International Center for Transformative Artificial Intelligence**

• **NITI Aayog, Intel and the Tata Institute of Fundamental Research (TIFR)** have come together to set up a model **International Center for Transformative Artificial Intelligence (ICTAI)** towards developing and deploying AI-led application-based research projects.

• It will be located in Bengaluru, Karnataka

• The model ICTAI aims to conduct advanced research to incubate AI-led solutions in three important areas – healthcare, agriculture and smart mobility.

• Another key area of its focus will be collaboration with industry leaders, startups, and AI services and product companies to productize technologies and IP and along the lines support skilling and talent development for world-class AI talent

➢ **SpiNNaker : World's largest brain-like supercomputer**

• It is the world's largest supercomputer designed to work in the same way as the human brain. It has been switched on for the first time.

• The newly formed million-processor-core Spiking Neural Network Architecture (SpiNNaker) machine is capable of completing more than 200 million million actions per second, with each of its chips having 100 million transistors.

• The SpiNNaker machine, designed and built in The University of Manchester in the UK, can model more biological neurons in real time than any other machine on the planet.

• Neuromorphic computing uses large scale computer systems containing electronic circuits to mimic these spikes in a machine.

➢ **RISECREEK**

• Computer scientists from Indian Institute of Technology **(IIT)**, Madras have **developed the first of family of six industry-standard microprocessors** under **Project Shakti.**

• **Project Shakti was started in 2014 as IIT-M initiative** and part of it is funded by Ministry of Electronics and Information Technology

About RISECREEK Microprocessors

• They optimizes power use and competes with international **units such as Cortex A5 from Advanced RISC Machines (ARM).**

• They have better performance in terms of DMIPS *[Dhrystone MIPS (Million Instructions per Second), or **DMIPS, is a measure of computer performance relative to the performance of the DEC VAX 11/780 minicomputer of the 1970s]** per megahertz*.

• These viable industry-grade **microprocessors can operate at a frequency of 350 MHz**, thus meets demands of defence and strategic equipment of the country such as **NAVIC (Indian Regional Navigation Satellite) and Internet of Things (IoT) electronics.**
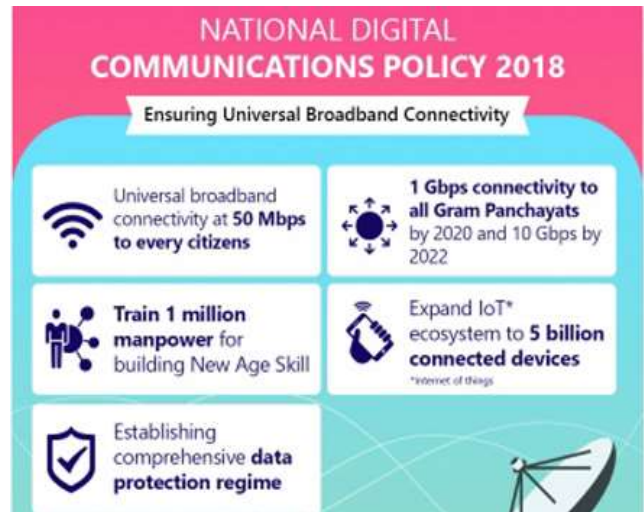
➢ **Net Neutrality Gets Okay From Telecom Commission**

• In a move that will ensure open and free Internet in India, the government has approved the principle of Net neutrality.

- This means that **telecom and Internet service providers** must treat all data on the Internet equally, and not discriminate or charge differently by user, content, site, platform, or application.

- They cannot engage in practices such as blocking, slowing down or granting preferential speeds to any content.

- **The Telecom Commission (TC),** the highest decision-making body in the Department of Telecom, approved the recommendation made eight months ago by the Telecom Regulatory Authority of India (TRAI) on the subject.

- India's decision to uphold Net neutrality assumes greater significance, given that in the **U.S., the rules on Net neutrality were repealed, which effectively paves the way for service providers to block or slow down access to particular content for users.**

➢ **National Digital Communications Policy 2018**

- The Union Cabinet approved the new Telecom Policy which aims to create *four million jobs, draw $100 billion of investments* into the telecom industry by 2022, *boost sectoral contribution to 8% of GDP* from 6% in 2017, besides backing principles of *net neutrality*.

- In pursuit of accomplishing these objectives by year 2022, the National Digital Communications Policy 2018 envisages three Missions:

  o **Connect India:** Creating Robust Digital Communications Infrastructure to promote Broadband for All as a tool for socio-economic development, while ensuring service quality and environmental sustainability.

  o **Propel India:** Enabling Next Generation Technologies and Services through Investments, Innovation and IPR generation; To harness the power of emerging digital technologies, including 5G, AI, IoT, Cloud and Big Data to enable provision of future ready products & services; and to catalyse 4th industrial revolution by promoting Investments, Innovation and IPR.

  o **Secure India:** Ensuring Sovereignty, Safety and Security of Digital Communications To secure the interests of citizens and safeguard the digital sovereignty of India with a focus on ensuring individual autonomy and choice, data ownership, privacy and security; while recognizing data as a crucial economic resource.

➢ **India Approves Accession To WIPO Internet Treaties For Protecting Intellectual Property**

- The union cabinet has approved acceding to the World Intellectual Property Organization's internet treaties. These treaties — **the WIPO Copyright Treaty and WIPO Performers and Phonograms Treaty** — both came into force in 2002 and were designed to protect intellectual property as the internet started getting big.

- Both the treaties empower copyright holders to deploy technologies like **Digital Rights Management software that make it harder to create copies of online content. In India, sections 65A and 65B of the Copyright Act were added in 2012** via amendment, and these amendments essentially harmonized the copyright regime with the internet treaties.

- The **WIPO Copyright Treaty** came in force on March 6, 2002 **and is a Special agreement under the Berne Convention** (**for protection of literary and artistic works**). It has provisions to **extend the protection of copyrights contained therein to the digital environment.**
- The **WIPO Performances and Phonograms Treaty** came in force on May 20, 2002 .WPPT **deals with rights of two kinds of beneficiaries, particularly in digital environment – (i) Performers (actors, singers, musicians etc.) (ii) Producers of Phonograms (Sound recordings).**

SPACE

➢ **Ensemble Prediction Systems (EPS)**

- The **India Meteorological Department (IMD)** launched a new **Ensemble Prediction Systems (EPS)** with an objective to offer more accurate and credible weather forecasts weather conditions down to the block level.

- The system will help in generating newer forecasts predictions of a **12 km resolution compared to 23 kilometres in the earlier system.**

- With this new model, **India joins the US** with a model that predicts with a 12 km resolution. **Only the 'European Centre for Medium-Range Weather Forecast' of United Kingdom** has a, better, nine-kilometre resolution.

➢ **RemoveDEBRIS Mission To Tackle Space Junk**

- A spacecraft that will demonstrate a range of innovative technologies to clean up space debris has been deployed from the International Space Station (ISS) & will soon begin its experiments in orbit.

- **RemoveDEBRIS**, will attempt to address the build-up of dangerous space debris orbiting Earth.The mission will perform four experiments, including harpoon capture in orbit and a net that will be used on a deployed target.

- The team will also test a vision-based navigation system that uses cameras and **Light Detection and Radar (LIDAR) technology** to observe **CubeSats** that will be released from the main spacecraft. Finally, RemoveDebris will deploy a large sail that will drag it into the Earth's atmosphere, where it will be destroyed.
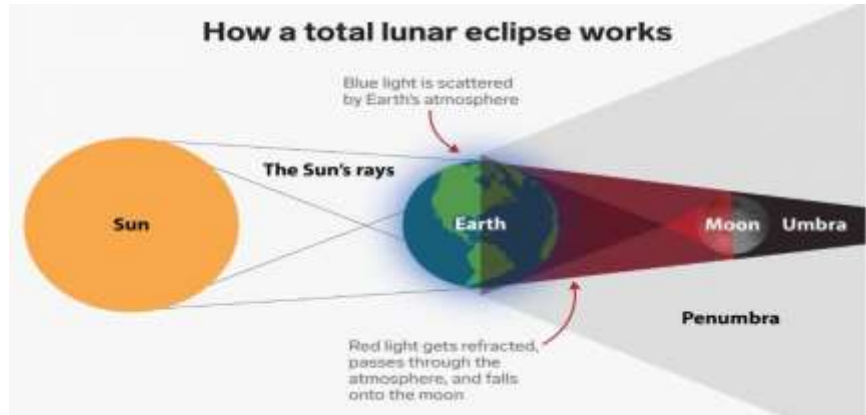
➢ **Russia Launches Soyuz-2.1B**

- Russia has successfully launched **Glonass-M positioning satellite** on board of Soyuz-2.1b carrier rocket. The satellite is **part of GLONASS network**.

- GLONASS is Russian acronym for **Global Navigation Satellite System**, which provides real-time positioning data for surface, sea and airborne objects around globe, at accuracy reportedly at par with US Global Positioning System (GPS).

- Glonass is considered as counterpart to **GPS of US**, **Galileo of European Union (EU)** and **Beidou of China. NAVIC by India** is similar to these Navigation satellite systems but with lesser satellites.

- The **Indian Regional Navigation Satellite System** (**IRNSS**), with an operational name of **NAVIC** and also standing for **NAV**igation with **I**ndian **C**onstellation, is an autonomous regional satellite navigation system that provides accurate real-time positioning and timing services

- It **covers India and a region extending 1,500 km around it**, with plans for further extension.

- The **constellation consists of 7 satellites. Three** of the seven satellites are located in **geostationary orbit** (GEO) approximately 36,000 km (22,000 mi) above earth surface. Remaining **four satellites are in inclined geosynchronous orbit (GSO).**

➢ **Century's Longest Total Lunar Eclipse Of 1 Hour 43 Minutes Occured On July 27-28, 2018**

- In this particular eclipse, Moon will be passing through central part of Earth's umbral shadow. During this time, Moon is located at apogee (i.e. at farthest from the Earth) in its orbit and will be moving at slower speed in its orbit. During this transition phase, it will take longer time for Moon and greater distance of Earth's umbral shadow to travel, making it longest duration of total eclipse of this century.

How a total lunar eclipse works

- A total lunar eclipse is a celestial event that occurs when the Earth comes in between the Sun and the Moon, completely immersing the Moon in the umbra of the Earth's shadow.

- A lunar eclipse is also called **blood moon** because the moon when eclipsed by the Earth takes on a reddish hue as the Sunlight falling on it gets filtered by the atmosphere of the Earth.

- **A blue moon** occurs when **two full moons rise in the same calendar month**. Generally, a full moon can be seen once a month. Occasionally, in every three years or so, it happens twice in one month. The second full moon of a month is termed as a blue moon.

- **A super moon occurs** when the moon is at its closest point to Earth and appears to be 14 percent bigger and 30 percent brighter than normal.

➢ **NASA Reveals Its Plan To Save Humans From Destruction**

- The 10 year action plan includes enhancing NEO (Near Earth Object) detection, tracking, and characterisation capabilities; improving NEO modelling prediction, and information integration

- NASA's catalogue contains over 18000 NEOs with **8000 NEOs as >140m wide**, the size at which mass casualties would occur. NASA has documented roughly 96% of the objects large enough to cause a global catastrophe

- **Double Asteroid Redirection Test (DART) Mission** will be the most prominent demonstration of the kinetic impact technique to change the motion of an asteroid in space. Its primary objective is to demonstrate it on **small binary near-Earth asteroid (65803) called Didymos. Asteroids are rocks whose orbits lie mostly between Jupiter and Mars.**

- **NASA** is a key member in both the **International Asteroid Warning Network** (**IAWN**) and the asteroid Space Mission Planning and Advisory Group, endorsed by the **UN Committee on the Peaceful Uses of Outer Space (UN-COPUOS) as the combined** response for all space-capable nations to address the NEO impact hazard.

- **IAWN** was **established (2013)** to create an international group of organizations involved in detecting,

tracking, and characterizing NEOs.

- The **UN-COPUOS** was set up by the **General Assembly in 1959** to govern the exploration and use of space for the benefit of all humanity: for peace, security and development.

➢ **Exoplanet Find That Put India In Select League**

- In an epic Indian discovery, a team from the Physical Research Laboratory, Ahmedabad, has spotted for the first time a distant planet *six times bigger than Earth* and revolving around a **Sun-like star about 600 light years away. Both the planet and the star have been named EPIC 211945201b (or K2-236b).**

- Significantly, the discovery was made using a **PRL-designed spectrograph, PARAS**(**PRL Advance Radial-velocity Abu-sky Search**), to measure and confirm the mass of new planet. The spectrograph is first of its kind in country which can measure mass of a planet going around a star

- Such a discovery is of importance for understanding the formation mechanism of such super-Neptune or sub-Saturn kind of planets that are too close to the host star.

An **exoplanet** or extrasolar planet is a planet outside our solar system around a different host star than sun.Some of the exoplanetary system are **Trappist-1 planetary system, kepler-11 planetary system, TrES-4. Kepler 90 is the first star system to have as many planets as our solar system .**

➢ **India's First Robotic Telescope Opens Its Eyes To The Universe**

- **The telescope located at the Indian Astronomical Observatory (IAO) at Hanle in Ladakh is the country's first robotic telescope** and the first one designed to observe dynamic or transient events in the universe.

- Called **GROWTH-India**, the facility at Hanle is part of a multi-country collaborative initiative known as '**Global Relay of Observatories Watching Transients Happen' (GROWTH)** to observe transient events in the universe.

- The fully robotic optical research telescope is **designed to capture cosmic events occurring in timescales much shorter than light years** – years, days and even hours.

- The initiative will focus on **three scientific themes** in the field of time-domain astronomy – cosmic explosions (supernova), small near-earth asteroids and the electromagnetic identification of gravitational wave sources

➢ **NASA's New Planet Hunting Probe – TESS**

- NASA's latest planet hunting probe **–Transiting Exoplanet Survey Satellite (TESS)** – has started its search for new worlds around nearby stars. TESS will survey 200,000 of the brightest stars near the sun to search for transiting Exoplanet.

- **TESS is the next step** in the search for **planets outside of our solar system**, including those that could support life. The **mission will find Exoplanet that periodically block part of the light from their host stars**, events called **transits.**

- **The transit method of detecting Exoplanet** looks for dips in the visible light of stars, and requires that planets cross in front of stars along our line of sight to them. Repetitive, periodic dips can reveal a planet or planets orbiting a star.

- **NASA's orbital telescope Transiting Exoplanet Survey Satellite**, better known as **TESS** discovered two distant planets five months after its launch.

- The first planet **Pi Mensae c**, a **super-earth** orbits a bright yellow dwarf star Pi Mensae, just under 60 light-years from Earth. The second **LHS 3844 b**, a **hot earth**, orbits a red dwarf star LHS 3844, just under 49 light-years away.

- **A planet is classified as a super-earth if it's at least three times the mass of Earth** and can be as big as 10 times the size of Earth.

➢ **India's Roadmap For Manned Flight To Space**

- **Indian Space Research Organization (ISRO)** unveiled details of its first indigenous human space mission dubbed as **Gaganyaan** to be launched in 2022. Under it, three Indian astronauts (Gaganyatris) will be taken to space on board Gaganyaan spacecraft by **2022.**

- This will be the **first human space mission to be indigenously developed by ISRO**. If successful, **India will become fourth nation** in the world to send astronaut into space after US, Russia and China.

- **GSLV Mk-III launch vehicle will be used to launch Gaganyaan** as it has necessary payload capability for this mission. It **weighs approximately 7 tonnes** and will be **placed in low earth orbit (LEO) of 300-400 km.**

> ISRO has successfully demonstrated some of the technologies required for the mission such as **Space Capsule Recovery Experiment (SRE-2007)**, **Crew module Atmospheric Reentry Experiment (CARE-2014)**, **GSLV Mk-III (2014)**, **Reusable Launch Vehicle- Technology Demonstrator (RLV-TD)**, **Crew Escape System (July 2018)** and **Pad Abort Test (2018).**

➢ **World's First Wind-Sensing Satellite**

- **European Space Agency (ESA)** successfully launched wind-sensing satellite named **'Aeolus'** into orbit on board of Vega rocket from French Guyana

- It is **world's first wind-sensing satellite dedicated to map Earth's wind** on global scale in particular tropical winds which are very poorly mapped

- The **satellite is named after guardian of wind in Greek mythology**. It will be placed at altitude of 320km above the Earth. It is part of the **Copernicus project**, a joint initiative of European Union (EU) and European Space Agency (ESA) to track environmental damage and aid disaster relief operations.

➢ **OSIRIS-REX SPACECRAFT**

- After an almost two-year journey through space, **NASA's Origins, Spectral Interpretation, Resource Identification, Security-Regolith Explorer (OSIRIS-REx) caught its first glimpse of Bennu**, a carbonaceous asteroid whose makeup may record the earliest history of our Solar System and began the final approach toward the asteroid.

- **OSIRIS-REx,** led by the University of Arizona's Lunar and Planetary Laboratory, is the **first U.S mission to retrieve a sample from an asteroid and return it Earth for study**. The material it returns will be the largest sample brought back from space since the Apollo era.

- **Bennu is near-Earth carbonaceous asteroid** about the size of a small mountain in the Apollo group. It was discovered in September 1999 by the LINEAR Project. **It is carbon-rich asteroid and**

believed to be the type of asteroids that may have chemical building blocks of life, along with lots of water.

➢ **Scientists Discover A New Source Of Neutrinos In Space**

• **Neutrinos – extremely light, ghostly particles that barely interact with matter** – have so far only been **observed originating from supernovae (exploding stars) and the sun**.

• Now a giant detector at the South Pole has discovered that a "**blazar",** a galaxy with a supermassive black hole at its centre, also produces neutrinos. Owing to a powerful black hole at its core, this type of galaxy flings out particles. They fly across the cosmos blindingly fast — some at nearly the speed of light.

• This is the first time a source of neutrinos in space has been discovered in more than 30 years. What's more, it's the first time scientists have observed a neutrino particle with high energy associated with an astrophysical event.

• **The IceCube experiment at the South Pole** is a cubic kilometre in size and uses deep arctic ice as a target for the neutrinos. Although neutrinos typically don't interact with anything, they can produce a charged particle when they occasionally do interact with the fundamental particles that make up ice. In IceCube, this resulting particle travels through the ice and produces a trail of faint light.

• **Blazars remain poorly understood. One mystery: What types of particles do they blast out? Because high-energy neutrinos must be produced along with protons, finding these neutrinos means that blazars must also create cosmic rays**. (Cosmic rays consist of protons and atomic nuclei.)

➢ **ICESAT-2**

• **NASA** has launched a satellite **Ice, Cloud and Land Elevation Satellite-2** (ICESAT-2) into orbit **to measure changes in the height of Earth's polar ice cover.**

• The ICESat-2 observatory contains a **single instrument,** an improved laser altimeter called **ATLAS (Advanced Topographic Laser Altimeter System).**

• It uses a technique called **photon counting**. It fires about **10,000 pulses of light every second**. Each of those shots go down to Earth and bounce back up on a timescale of about 3.3 milliseconds. The exact time equates to the height of the reflecting surface.

• **ATLAS is designed to measure ice-sheet topography, sea ice freeboard** as well as cloud and atmospheric properties and global vegetation. Satellite is also tasked with measuring ocean & land surfaces.

• **It will extend and improve upon NASA's 15-year record of monitoring change in polar ice heights,which started in 2003 with the first ICESAT mission and continued in 2009 with NASA's Operation Ice Bridge** — an airborne research campaign that kept track of accelerating rate of change.

➢ **Cassini Spacecraft**

• Data from **NASA's Cassini spacecraft** has led to the scientists spotting a surprising feature emerging at **Saturn's northern pole** as it nears summertime — **a warming, high-altitude jet stream with a hexagonal shape.**

- The results suggest that the lower-altitude hexagon may influence what happens above, and that it could be a towering structure hundreds of miles in height.

The **Cassini–Huygens mission**, commonly called Cassini, was collaboration **between NASA, the European SpaceAgency (ESA), and the Italian Space Agency (ASI)** to send a probe to the planet Saturn and its system, including its rings and natural satellites. Cassini was the fourth space probe to visit Saturn and the **first to enter its orbit.** The lander Huygens landed on Saturn's largest moon **Titan Cassini was active in space for nearly 20 years, with 13 years spent orbiting Saturn, after entering orbit in July 2004.** Its mission ended in September 2017, when Cassini's trajectory took it into Saturn's upper atmosphere and it burned up

➢ **ISRO Launches Two U.K. Satellites**

- ISRO recently launched PSLV-C42 into orbit carrying two earth observation satellites from Britain. The satellites onboard are **NovaSAR and S1-4.**

- **NovaSar is a Synthetic Aperture Radar** that will be used for **ship detection, maritime monitoring and flood monitoring**, besides agricultural and forestry applications.

- The **S1-4 is a high-resolution optical earth observation satellite which will be used for environment** monitoring, urban management, and tackling disasters.

Geo-Synchronous satellites: the satellites in these orbits **appear to remain permanently fixed in the same position in the sky**, **as viewed from a particular location on Earth**,its orbital period matches the earth's rotation on its axis, thus avoiding the need of a tracking ground antenna and hence are **useful for the communication applications**. Over the course of a day, the object's position in the **sky traces out a path, typically in a figure-8 form.**

 A **Sun-synchronous orbit (SSO, also called a heliosynchronous orbit) is a nearly polar orbit around a planet, in which the satellite passes over any given point of the planet's surface at the same local mean solar time, making the satellite useful for earth resources monitoring.**

➢ **ISRO unveils Polarimetry Doppler Weather Radar at Sriharikota**

- The **S–Band Polarimetry Doppler Weather Radar** facility was launched at Satish Dhawan Space Centre, Sriharikota.

- The Doppler Weather Radar (DWR) provides advanced information, enhances the lead-time essential for saving lives and property in the event of a natural disaster associated with severe weather.

- While conventional radars are able to track and predict cyclones, the DWR provides detailed information on a storm's internal wind flow and structure.

- **The polarimetric capability of the radar will significantly improve the accuracy of rainfall** estimation leading to accurate and timely flash flood warnings.

➢ **NASA's Dawn asteroid mission**

- Dawn, a NASA spacecraft that launched 11 years ago and studied two of the largest objects in the asteroid belt, has ended its mission after running out of fuel.

- Dawn was essentially out of **hydrazine**, the fuel that kept the spacecraft's antennae oriented toward Earth and helped turn its solar panels to the Sun to recharge.

- Dawn became the only spacecraft ever to orbit a cosmic body in the main asteroid belt between Mars and Jupiter in 2011 when it began circling the asteroid Vesta.

- Then it moved on to the dwarf planet Ceres in 2015, becoming the first spacecraft to visit a dwarf planet and the only spacecraft to orbit one.

- Dawn is the only mission ever to orbit two extraterrestrial targets. It orbited giant asteroid Vesta, then continued on to Ceres, where it has been in orbit since March 2015.

➢ **Planetary Nebula**

- Indian astrophysicists have discovered large ultraviolet lobes and jets, hurled out from a dying star-NGC 6302, popularly called the **Butterfly Nebula**, **using data from AstroSat**,

- A planetary nebula is formed when a star like our Sun – or a few times heavier – is in its dying days.

- When hydrogen and helium fuel that kept the star shining gets exhausted, the **star expands in size and becomes a red giant star**. Such stars shed most of their outer layers which expands outwards, and the inner core, made of carbon and oxygen, shrinks further and becomes hotter. **This hot core shines brightly in the ultraviolet, and ionises the expanding gas**. This glowing ionised gas is what is seen as a planetary nebula.

➢ **NASA's Kepler Space Telescope**

- The Kepler space telescope has **run out of fuel** and will be retired after a 9-1/2-year mission. **Currently orbiting the sun 156 million km from the earth**, the spacecraft will drift further from our planet when mission engineers turn off its radio transmitters.

- Launched in 2009, the Kepler mission is specifically designed to survey our region of the Milky Way galaxy **to discover hundreds of Earth-size and smaller planets in or near the habitable zone** and determine the fraction of the hundreds of billions of stars in our galaxy that might have such planets.

- Since the launch of the observatory in 2009, astronomers have discovered thousands of extra-solar planets, or exoplanets, through this telescope alone. Most of them are planets that are ranging between the size of Earth and Neptune (which itself is four times the size of Earth). Most of these planets were discovered in a small **region of the constellation Cygnus**, at which Kepler was pointed for the first four years of its mission.

Habitable Zone

- **The habitable zone (or "Goldilocks zone") is the range of orbital distances from a star at which liquid water can exist on the surface of a planet**.

- This range of distances changes depending on the size and temperature of the star.

- Earth is in the habitable zone of the sun – one of the reasons our planet has liquid water like oceans and lakes.

➢ **NASA's Orion Spacecraft**

- **Europe's Airbus has delivered the "powerhouse" for NASA's new Orion Spaceship** that will take astronauts to the Moon and beyond in coming years, hitting a key milestone that should lead to hundreds of millions of euros in future orders..

- Orion will serve as the exploration vehicle that will carry the crew to space, provide emergency abort capability, sustain the crew during the space travel, and provide safe re-entry from deep

space return velocities. Orion will launch on NASA's new heavy-lift rocket, the Space Launch System.

➢ **NASA's Ralph and Lucy**

• **NASA's Ralph and Lucy are all set to explore Jupiter's Trojan asteroids, which are remnants from the earliest days of our solar system**.

• Ralph is a space instrument that has travelled as far as Pluto, while Lucy is a mission payload, or the spacecraft which would be carrying various scientific instruments including Ralph to study the properties of the asteroids.

• The name Lucy' was taken from the name of the fossil of the earliest human ancestor yet discovered..

• The Lucy mission will comprise a 12-year journey with a fly-by to seven different asteroids — six Trojan asteroids and a Main Belt asteroid — more than any other previous asteroid mission. The mission will get us up-close with both the clusters of Trojan asteroids.

• The mission will be launched in 2021 and would be the very first space mission to study the Trojans.

About NASA's Scientific Instrument Ralph

✓ Ralph first launched aboard the New Horizons spacecraft in 2006 and **obtained stunning flyby images of Jupiter and its moons**. This was followed by a **visit to Pluto where Ralph took the first high-definition pictures** of the iconic minor planet.

✓ The instrument **will fly by another Kuiper Belt object called 2014 MU69** — nicknamed Ultima Thule — in January 2019.

✓ Ralph enables the study of the composition and atmospheres of celestial objects.

Jupiter's Trojan Asteroids

• **The Trojan asteroids are orbiting Sun in two loose groups — one group is always ahead of Jupiter (called the Greek camp) in its path while the other is always behind (called the Trojan camp). The two clusters are stabilized at these two Lagrange points in a gravitational balancing act between the Sun and Jupiter**.

• As per the NASA all of the Trojans are thought to be abundant in dark carbon compounds. Below an insulating blanket of dust, they are probably rich in water and other volatile substances.

➢ **China unveils 'heavenly palace' Space Station**

• China has unveiled a replica of its **first permanently-crewed space station**, which would replace the international community's orbiting laboratory- the International Space Station (ISS) and symbolises the country's major ambitions beyond Earth.

• Assembly is expected to be completed around 2022 and the station would have a lifespan of around 10 years.

• **The International Space Station – a collaboration between the United States, Russia, Canada, Europe and Japan – has been in operation since 1998 and is due to be retired in 2024**.

• China will then have the only space station in orbit, though it will be much smaller than the ISS which weighs 400 tonnes and is as large as a football pitch

➢ **GSAT 29**

- The Indian Space Research Organisation (ISRO) has launched its latest communication satellite, GSAT-29, from its second developmental flight GSLV-MkII D2.

- **GSLV Mk III** is a three-stage heavy lift launch vehicle developed by the Indian Space Research Organisation (ISRO). **Two massive boosters with solid propellant constitute the first stage, the core with liquid propellant form the second stage and the cryogenic engine completes the final stage.**

➢ **HysIS**

- *HysIS*, ***the country's first hyperspectral imaging satellite for advanced Earth observation***, is slated for the launch. About 30 small satellites of foreigncustomers will be its co-passengers on the PSLV launcher, numbered C-43.

- The primary goal of HysIS is **to study the Earth's surface in visible, near-infrared and shortwave infrared regions of the electromagnetic spectrum**.

- A hyperspectral imaging camera in space can provide well-defined images that can help to identify objects on Earth far more clearly than regular optical or remote sensing cameras.

➢ **NASA's InSight Spacecraft**

- **InSight,** a NASA spacecraft designed to burrow beneath the surface of Mars has landed on the red after a six-month, 482 million-km journey.InSight is part of ***NASA's Discovery Program***

- ,*It **will be the first mission to peer deep beneath the Martian surface**, studying the planet's interior by measuring its heat output and listening for marsquakes, which are seismic events similar to earthquakes on Earth.

- InSight seeks to answer one of science's most fundamental questions: How did the terrestrial planets form?

➢ **NASA to send organs on chips to space**

- NASA is planning to send small devices containing human cells in a 3D matrix — known as tissue chips or organs-on-chips — **to the International Space Station (ISS) to test how they respond to stress, drugs and genetic changes**.

- The "**Tissue Chips in Space**" initiative seeks to better understand the role of microgravity on human health. Made of flexible plastic, tissue chips have ports and channels to provide nutrients and oxygen to the cells inside them.

➢ **Experimental Advanced Superconducting Tokamak (EAST)**

- **China has announced that its Experimental Advanced Superconducting Tokamak (EAST) reactor — an "artificial sun"** designed to replicate the process our natural Sun uses to generate energy — just hit a new temperature milestone: 100 million degrees Celsius (180 million degrees Fahrenheit).

- For comparison, the core of our real Sun only reaches about 27 million degrees Fahrenheit — meaning the EAST reactor was, briefly, more than six times hotter than the closest star.

- It uses a ring to house heavy and super-heavy isotopes — atomic variations — of hydrogen known as deuterium and tritium.

- The isotopes are heated by powerful electric currents within the tokamak, tearing electrons away from their atoms and forming a charged plasma of hydrogen ions.

➢ **China's Artificial Moon**

- China has planned to launch an artificial moon over the city of Chengdu, in **Sichuan province, by 2020**. **The objective is to provide an alternative means of street lighting and save on electricity.**

- As per preliminary reports the artificial moon would be a mirror orbiting Chengdu at a height of 500 km. **It would reflect the sun's light at night, and supplement street lighting in Chengdu.**

- The **extraterrestrial source of light will also help rescue efforts in disaster zones during blackouts.**

- **China is not the first country to try beaming sunlight back to Earth**. **In the 1990s, Russian scientists reportedly used giant mirrors to reflect light from space in an experimental project called Znamya or Banner.**

➢ **Hyperion Proto-supercluster**

- Astronomers using the **VIMOS instrument of European Southern Observatory's** Very Large Telescope have spotted a gigantic galaxy proto-supercluster in the early Universe**.**

- **Nicknamed Hyperion, the newly-discovered proto-supercluster is the largest and most massive structure to be found at such a remote time and distance — merely 2 billion years after the Big Bang.**

- **Superclusters closer to Earth tend to a much more concentrated distribution of mass with clear structural features** but in Hyperion, the mass is distributed much more uniformly in a series of connected blobs, populated by loose associations of galaxies**.**

➢ **BepiColombo: Joint Mission to Mercury**

- BepiColombo is a planned **European-Japanese mission to Mercury**.

- The mission includes a carrier spacecraft **called the Mercury Transfer Module (MTM) – which supplies electrical power during interplanetary cruise – and two separate orbiters.**

- **Going to Mercury** would help scientists **not only understand how the planet had formed, but also give more information generally about the solar system's formation.**

DEFENCE TECHNOLOGY

➢ **Dhanush Artillery Gun Clears Final Trials, Ready To Be Inducted In The Army.**

- Dhanush, with a strike range of 38 km, is an upgraded version of the Swedish Bofors gun procured by India in the mid-1980s.

- Besides features such as electronic gun-laying and sighting systems, the indigenous gun's hitting range was 11 km more than the imported Bofors guns.

➤ **India's Very Own Drone Hunter**

• India's **Bharat Electronics Limited has developed a 'Drone Guard System' (DGS**) to detect, track and neutralise adversarial drones

• This is significant as recent reports have pointed out that **Pakistan based drug smugglers are using drones to deliver contraband across the border.**

• The **DGS uses RF(Radio Frequency) spectrum** for drone detection while the neutraliser uses RF jamming to bring it down. Alternatively, it can also hoodwink the GPS system.

➤ **Counter-Drone Strategy For Airports Ready**

• A strategy to neutralise drones near airports has been finalized by the aviation security watchdog BCAS (Bureau of Civil Aviation Security).

• The counter-drone plan has been prepared by a committee headed by Kumar Rajesh Chandra, the Director General of BCAS.

• The **strategy proposed a "soft kill" approach instead of a hard kill** approach because destroying a drone with a payload of explosives or biochemical will result in an attack and serve the purpose of their handlers.

• **"Soft kill" approach includes entrapping or jamming drones instead of destroying them.**

• The Bureau of Civil Aviation Security was initially set up as a Cell in the Directorate General of Civil Aviation (DGCA) in January 1978 on the recommendation of the Pande Committee constituted in the wake of the hijacking of the Indian Airlines flight on 10th September , 1976.

• The main responsibility of BCAS are lay down standards and measures in respect of security of civil flights at International and domestic airports in India.

➤ **Tejas Commences Operations From Sulur Air Force Station**

• **Indigenous fighter aircraft Tejas (of No 45 Squadron 'The Flying Daggers'**) formally commenced operations from the Air Force Station at Sulur near Coimbatore

• **Tejas is the first advanced fly-by-wire fighter aircraft designed, developed and manufactured in India by Bengaluru headquartered HAL.**

➤ **Indigenous Weapon Systems Tested**

• The Defence Research and Development Organisation (DRDO) has successfully tested indigenously developed light weight glide bomb **Smart Anti Airfield Weapon (SAAW**)

• **SAAW project is India's first fully indigenous anti-airfield weapon project** sanctioned by Government in September 2013. It was indigenously developed by state-run Defence Research and Development Organisation (DRDO) in collaboration with IAF and the Research Centre Imarat (RCI).

• **SAAW is long-range lightweight high precision-guided anti-airfield weapon. It is 120 kg smart weapon capable of engaging ground targets with high precision up to range of 100 km.**

• It is designed for deep penetration and is armed with high-explosive warhead, which is usually very difficult to achieve operationally with simple gravity bombs.

BIOTECHNOLOGY

➢ **DNA Profiling Bill**

- The Union Cabinet has approved the setting up of a regulatory body for DNA laboratories and **The DNA Technology (Use and Application) Regulation Bill, 2018** to regulate the use of human DNA.

- Bill provides mandatory accreditation and regulation to DNA laboratories.

- A National DNA Databank and certain regional DNA Databanks will store DNA profiles received from DNA labs in a specified format

- The Bill states that DNA information cannot be taken from an arrested person without consent. The exception is only for specified offences, though the Bill does not elaborate on this.

- The **Secretary to the Department of Biotechnology** has been made the ex-officio chairman of the proposed DNA Regulatory Board

- The Bill states that the DNA data, including DNA profiles, samples and records, contained in any DNA labs and Databank shall be made available only to facilitate the identification of persons in criminal cases

- **A cornerstone of privacy protection worldwide is the principle of purpose limitation. This means that information collected for one purpose should not be used for a completely different one**. India's DNA bill is not compliant with this principle: it mixes up potential uses of DNA in solving crimes with civil issues, such as solving paternity disputes**.**

➢ **Genome Valley 2.0**

- **Telangana Government** has signed a MoU with **Singapore-based Surbana Jurong** for preparing a roadmap for Genome Valley 2.0, an upgraded version of life sciences and biotechnology.

- The current initiative will introduce a world class knowledge cluster and lay a master plan to transform the ecosystem into a smart satellite town of Hyderabad.

- The Genome Valley cluster has emerged as the largest life sciences destination in Asia, being home to over 200 companies employing 10,000 people.

➢ **Microbiome Research**

- From November 19 to 22, *Pune hosted an international conference on microbiome research* — a field of study that is still in its infancy in India.

- The human body carries diverse communities of microorganisms, which are mainly bacterial. These are referred to as "human microbiome".

- These organisms play a key role in many aspects of host physiology, ranging from metabolism of otherwise complex indigestible carbohydrates and fats to producing essential vitamins, maintaining immune systems and acting as a first line of defense against pathogens.

➢ **CRISPR Technology**

- A Chinese researcher recently claimed that he had altered the genes of a human embryo that eventually resulted in the birth of twin girls. The genes were claimed to be "edited" to ensure that they do not get infected with HIV, the virus that causes AIDS.

- If proven, it would be the first instance of human offspring having been produced with specific desired attributes, using newly-developed tools of gene "editing".

- ***CRISPR technology is basically a gene-editing technology*** that can be used for the purpose of altering genetic expression or changing the genome of an organism.

- The technology can be used for targeting specific stretches of an entire genetic code or editing the DNA at particular locations.

- CRISPR technology is a simple yet powerful tool for editing genomes. It allows researchers to easily alter DNA sequences and modify gene function.

- Its many potential applications include correcting genetic defects, treating and preventing the spread of diseases and improving crops. However, its promise also raises ethical concerns.

➢ **Transgenic Rice with reduced Arsenic Accumulation**

- **Arsenic accumulation in rice grains is one of the serious agricultural issues in India**. To address this, researchers at Lucknow-based **CSIR-National Botanical Research Institute** have developed transgenic rice by inserting a novel fungal gene, which results in **reduced arsenic accumulation in rice grain.**

- Researchers have cloned ***Arsenic methyltransferase (WaarsM) gene*** from a soil fungus, Westerdykellaaurantiaca, and inserted the same into the rice genome with the help of Agrobacterium tumefaciens, a soil bacterium which has natural ability to alter the plant's genetic makeup.

- The newly developed transgenic rice along with normal rice was then treated with arsenic. Comparison of transgenic and non-transgenic rice showed that transgenic plants accumulated less arsenic in root as well as shoot as compared to non-transgenic lines.

- Researchers found that the resulting transgenic plant acquired the potential for methylating inorganic arsenic to a variety of harmless organic species, including volatile arsenicals. This could be potential strategy for developing transgenic rice capable of low arsenic accumulation not only in grain but also in straw and feed which are used for livestock.

➢ **Earth Bio-genome Project**

- The Earth BioGenome Project plans to record the genomes — the DNA blueprint of life — of 1.5 million species of animal, plant, protozoa and fungi within a decade.

- They expect to read the full DNA sequence of all the world's eukaryotic species — organisms whose cells have a nucleus enclosed by membranes. These are animals, plants, fungi and protozoa, which encompass all of life except simple microbes (bacteria and archaea).

- Participating institutions aim to raise the required funds from governments, foundations and charities.

HEALTH AND MEDICINES

➢ **In A First, WHO Recommends Quadrivalent Influenza Vaccine**

• Sanofi Pasteur's injectable influenza vaccine **(FluQuadri) containing two A virus strains — H1N1 and H3N2** — and **two B virus strains — Victoria and Yamagata** — for active immunisation of adults of age 18 to 64 years was approved in May 2017 by Drug Controller General of India (DCGI).

• While a trivalent influenza vaccine contains both A subtype viruses, it has only one of the B subtype virus; the quadrivalent vaccine offers greater breath of protection as it includes both B subtype viruses.

• Influenza (flu) is a contagious respiratory illness caused by influenza viruses. The virus is transmitted easily from person to person via droplets.

• **The viruses used in the vaccine are killed** and this eliminates the possibility of the virus in the vaccine itself causing infection.

Universal Immunization Programme:

• **UIP** is a vaccination program launched by the Government of India in **1985**.

• The program now consists of vaccination for **12 diseases**- tuberculosis, diphtheria, pertussis (whooping cough), tetanus, poliomyelitis, measles, Hepatitis B, Diarrhoea, Japanese Encephalitis, rubella, Pneumonia (Heamophilus Influenza Type B) and Pneumococcal diseases (Pneumococcal Pneumonia and Meningitis).

• The other additions in UIP through the way are inactivated polio vaccine (IPV), rotavirus vaccine (RVV), Measles-Rubella vaccine (MR).

• Four new vaccines have been introduced into the country's Universal Immunisation Programme (UIP), including injectable polio vaccine, an adult vaccine against Japanese Encephalitis and Pneumococcal Conjugate Vaccine.

➢ **Doctors from Mangaluru's KMC Identify Rare Bloodgroup 'P Null' Phenotype**

• **A blood type is considered rare if fewer than one in 1,000 people have it.** A person is said to have rare blood group when he lacks the high frequency antigen or multiple common antigens.

• **The 'P null' blood group has anti-PP1Pk antibody that has the potential to cause acute intravascular haemolytic reaction** to incompatible blood transfusion. This antibody is also known to cause recurrent abortions in women.

• **ABO and Rh are the common types of blood group systems**. However, there are more than 200 minor blood group antigens known besides A, B and Rh

➢ **First Ever Colour X-Ray On A Human**

• **New Zealand** scientists have performed the first-ever 3-D, colour X-ray on a human, using a technique that promises to improve the field of medical diagnostics.

• The new device, based on the traditional black-and-white X-ray, incorporates particle-tracking technology developed for **CERN's Large Hadron Collider**, which in 2012 discovered the elusive Higgs Boson particle.

• **The CERN technology, dubbed Medipix,** works like a camera detecting and counting individual sub-atomic particles as they collide with pixels while its shutter is open. This allows for high-resolution, high-contrast pictures.

➢ **How Zika Virus Causes Microcephaly**

- Scientists from **National Brain Research Centre (NBRC**) have successfully identified the **molecular and cellular mechanisms** by which Zika virus causes Microcephaly

- The researchers found **the envelop protein (E protein) of Zika virus**,which is **responsible for entry of virus into the brain stem cells** and **responsible for arresting proliferation** of **human foetal neural stem cells** and also killing cells that were becoming neuron-like. The combined effect reduces the pool of foetal brain cells leading to smaller size of the brain.

- The study shows that **neutralizing E protein of Zika virus can help prevent** or reduce its harmful effects in **developing foetus**.

- Zika virus is a vector borne disease transmitted primarily by **Aedes aegypti mosquitoes**, which also transmits dengue. It can also **spread through blood transfusion and sexual contact.**
- **It is capable of causing serious birth defects i.e. neurological disorders and foetal deformation known as Microcephaly in which infants are born with abnormally smaller heads.**
- Besides, a possible link between the virus and **Guillain-Barré syndrome** (**a condition in which the body's immune system attacks part of the nervous system**) is also suspected.
- The National Brain Research Centre is a neuroscience research group, situated in Manesar in Gurgaon district. It is an **Autonomous Government Institute** accredited with the **deemed university status** and is a nodal center under Department of Biotechnology of the Ministry of Science and Technology.

➢ **Scrub Typhus**

- As per recent findings by a team of experts, Scrub typhus is the key cause of **Acute Encephalitis Syndrome (AES)** in eastern Uttar Pradesh. AES is characterized by high fever and neurological problems (mental confusion, disorientation or coma).

- Scrub typhus is a disease caused by a **bacterium called Orientia tsutsugamushi.** It is **spread** to people through bites of infected chiggers (larval mites). The adult mites do not bite, rather the larvae which are too small to be seen by the naked eye do so. Its **key symptoms** are fever, changes in Tissue and rashes on skin.

- It is an **occupational disease** frequently found in people who work in the fields and are in the habit of gardening

- Scrub typhus is endemic to **tsutsugamushi triangle (named after O. tsutsugamushi):** It is a part of the world which extends from **northern Japan and far-eastern Russia in north,** to the territories around **northern Australia in the south, and to Pakistan and Afghanistan in the west.**

➢ **New Influenza Vaccine**

- **India and European Union** have collaborated on a research programme called the **Horizon 2020.** This programme will be used to develop the next generation of Influenza vaccine that will help in protecting people around the world.

- This project will focus on a cost-effective and affordable influenza vaccine that will be developed with the aims of advancing efficacy, safety, duration of immunity, & reactivity against influenza strains**.**

- **This project will help in contributing to achievement of a Sustainable Development Goal 3 (SDG-3)**. It will ensure the health and well-being for all and also help the international community to prepare better in the event of an influenza pandemic.

➢ **New Ebola Virus Strain Discovered In West Africa**

• Epidemiological researchers in West Africa have discovered a new strain of the Ebola virus among bats in Sierra Leone **Known as the Bombali virus.**

• It has been named as Bombali virus strain, after district where it was found. **The Bombali virus is overall sixth known virus strain Ebola virus. Other is Zaire, Sudan, Tai Forest, Bundibugyo and Reston.**

• According to the study, the Bombali virus is distinct from other Ebola strains. It is not yet known whether it can cause disease outbreaks, although results show that it has the potential to infect human cells.

➢ **Presence of Wolbachia bacteria in mosquitoes linked with reduced spread of diseases such as Malaria and Dengue**

• Wolbachia is a tiny bacterium that is present in up to **60% of all species of insects, including several mosquito species.**

• When present in the mosquito, the viruses cannot replicate and hence small numbers of wolbachia-carrying mosquitoes are released in target areas

• But it is usually **not present in the Aedes aegypti mosquito**, the primary species responsible for transmitting dengue, chikungunya and Zika.

• **The World Mosquito Program introduced Wolbachia into Aedes aegypti** mosquitoes. **Once Wolbachia carrying mosquitoes are released, they breed with wild mosquitoes and over time, the majority of mosquitoes carry Wolbachia**.

➢ **New Genetic Disorder**

• In a first, researchers in the U.S. have identified in a human patient a genetic disorder only previously described in animal models

• The disorder is caused by mutations in a gene known as **ornithine decarboxylase 1 (ODC1)** and is defined by a number of clinical features including large birth weight, enlarged head size, hair loss,and developmental delays.

• The **ornithine decarboxylase 1 (ODC1)** gene plays an important role in a number of physiological and cell developmental processes including embryo and organ development.

➢ **Hepatitis E Virus**

• The World's first human case of Rat Hepatitis E has been detected in Hong Kong. Hepatitis E is a liver disease caused by the **hepatitis E virus (HEV): a small virus, with a positive-sense, single-stranded ribonucleic acid (RNA) genome.**

• The virus has at least 4 different types: **genotypes 1, 2, 3 and 4.**

• The virus is shed in the stools of infected persons, and enters the human body through the intestine. It is transmitted mainly through contaminated drinking water.

➤ **Staphylococcus Epidermidis**

• According to Australian scientists, **Staphylococcus epidermidis**, a **superbug resistant to all known antibiotics** is spreading undetected through hospital wards across the world.

• Staphylococcus epidermidis is a **bacterium** related to the better-known and deadlier **MRSA superbug.** It's found naturally on **human skin.**

• Antimicrobial resistance occurs when microorganisms (bacteria, viruses) change in ways that make the antibiotics to cure the infection caused by them ineffective. When the microorganisms become resistant to most antimicrobials they are often referred to as "superbugs".

➤ **Scientists Grow Human Oesophagus In Lab**

• In a first, scientists have successfully grown oesophageal organoids — **miniature, functional versions of the human food pipe** — using stem cells, paving the way for new ways to study and test drugs against gut disorders.

• The human oesophageal tissue was grown entirely from pluripotent stem cells(PSCs), which can form any tissue type in the body.

• The **oesophagus** is also known as the **gullet or food pipe. It is part of the digestive system, which is sometimes called the gastro-intestinal tract (GI tract.** It is a long, muscular tube connecting one's mouth to stomach and is around 25cm long in adults.

• Upon swallowing food, the walls of the oesophagus squeeze together (contract). This moves the food down the oesophagus to the stomach.

➤ **Prohibition and restriction of manufacture, sale and distribution of Fixed Dose Combinations (FDCs)**

• The Ministry of Health and Family Welfare has prohibited the manufacture for sale, sale or distribution for human use of **328 Fixed Dose Combinations (FDCs)** with immediate effect.

• The health ministry took this decision after the **Drugs Technical Advisory Board recommended that "there is no therapeutic justification**" for the ingredients contained in the banned FDC drugs and that these medicines "may involve risk to human beings".

• In 2016, the health ministry had banned 349 FDCs, claiming they were "**unsafe" and "irrational**" for consumption on the recommendation of **Chandrakant Kokate committee (2015**).

• An FDC is a **mixture of two or more therapeutic drugs packed in a single dose**. Several cough syrups, painkillers and dermatological drugs in India are FDCs

• Instead of buying two, or more, separate medicines, a patient can buy just one FDC medicine to treat multiple illness symptoms, which typically works out easier on the wallet.

➤ **Oneer**

• **Council of Scientific and Industrial Research, Indian Institute of Toxicology Research (CSIRIITR)**,Lucknow has developed an innovative technology for Drinking Water Disinfection System with trade name **Oneer.**

• It is **useful for continuous treatment of water and eliminates all disease causing pathogens** such as virus, bacteria, fungi, protozoa and cyst to provide safe drinking water. Oneer will provide access to safe and clean drinking water at a cost of just 2 paise / Ltr.

➢ **India's First Engine-less train**

• A **16-coach prototype** known as **Train 18 or T18, Indian Railways' first engine-less train**, made its inaugural trial

• Capable of running at a speed of up to 160 kmph, it is being referred to as a successor **to the 30-year-old Shatabdi Express.**

• The fully air-conditioned **semi-high speed train**, which will cut travel time by 15 per cent as compared to the Shatabdi, has been **manufactured by the Integral Coach Factory (ICF) in Chennai** and **completed in a record 18 months**.

• Driven by a **self-propulsion module without a separate locomotive**, the train comes with technical features for enhanced quick acceleration.

➢ **Trans Fatty Acids**

• Kerala is planning to launch an initiative to enforce dietary guidelines, involving the reduction of trans fatty acids (TFAs), salt and sugar in commercially available foods in the State.

• The initiative, with technical support from the World Bank, WHO and the Food Safety and Standards Authority of India (FSSAI), is being launched as unhealthy diet is pushing up metabolic syndrome and premature deaths due to non-communicable diseases (NCDs) among Keralites.

• Latest estimates put the prevalence of metabolic syndrome (MS) in Kerala between 24-33%, indicating that one in three or four persons — predominantly women — have this condition.

• **Metabolic syndrome (MS)** is a cluster of metabolic abnormalities — high blood pressure, high blood sugar, abdominal obesity, abnormal cholesterol or triglyceride levels — that occur together, raising risk of heart disease, stroke and diabetes.

TrTTrans

• **Trans fatty acids (TFAs) or Trans fats are the most harmful type of fats** which can have much more adverse effects on our body than any other dietary constituent. These fats are largely produced artificially but a small amount also occurs naturally. Thus in our diet, these may be present as Artificial TFAs and/ or Natural TFAs.

• **Artificial TFAs are formed when hydrogen is made to react with the oil to produce fats resembling pure ghee/butter**.

• In our diet the major sources of artificial TFAs are the partially hydrogenated vegetable oils (PHVO)/vanaspati/ margarine while the natural TFAs are present in meats and dairy products, though in small amounts.

• It is also associated with a higher risk of developing obesity, type 2 diabetes, heart disease, metabolic syndrome, insulin resistance, infertility, certain types of cancers and can also lead to compromised fetal development causing harm to the yet to be born baby.

➢ **ICMR Releases Guideline For Antibiotics' Judicious Use**

• To ensure judicious use of antibiotics in healthcare facilities, the *Indian Council of Medical Research (ICMR)* has released Antimicrobial Stewardship Guidelines to advise hospitals in setting up *Antimicrobial Stewardship Programmes (AMSP)* for the purpose.

• Antimicrobial resistance (AMR) is a major public health challenge, and with very few new antibiotics in the pipeline, it is important to use the existing drugs judiciously

OTHER DEVELOPMENTS

➢ **CSIR Lab To Give Technology For India's First Indigenous Lithium Ion Battery Project**

- Central Electro Chemical Research Institute (CECRI), Karaikudi, Tamil Nadu under Council of Scientific & Industrial Research (CSIR) and RAASI Solar Power Pvt Ltd have signed a MoU for transfer of technology **for India's first Lithium Ion (Li-ion) Battery project.**

- Currently, Indian manufacturers source **Lithium Ion Battery from China, Japan and South Korea** among some other countries. India is one of the largest importers and in 2017; it imported nearly 150 Million US Dollar worth Li-Ion batteries.

- Li-Ion batteries have applications in Energy Storage System – from hearing aid to container sized batteries to power a cluster of villages, Electric Vehicles (2-wheeler, 3-wheeler, 4-wheeler and Bus), portable electronic sector, Grid Storage, Telecom Towers, Medical Devices, Household and Office Power Back (UPS), Powering Robots in Processing Industry. Lithium-ion batteries can power any electrical application without the need of physical wires-means wireless.

Li-ion batteries are rechargeable batteries having high energy density , tiny memory effect[and low self-discharge. and commonly used in consumer electronics . It uses intercalated lithium compound instead of metallic lithium as its electrode and is able to store 150 watt-hours electricity per kg of battery. Rechargeable lithium-ion batteries cycle 5000 times or more compared to just 400-500 cycles in lead acid battery.

➢ **Researcher At Iisc Found A Novel Way To Produce Energy Using Sunlight & Carbon Dioxide**

- By using a collection of quantum dots made up of **Copper Aluminium Sulphate and Zinc Sulphide,** researchers were able to convert salts of carbon dioxide under visible sunlight.

- **By using the quantum dots,** they were able to significantly improve the energy conversion process by up to **20% compared to a natural leaf that is capable of only 1%** of the incident energy conversion.

- They named their materials as **'artificial leaves'** because of their ability to perform photosynthesis and similarity of their microstructures with that of a natural leaf.

- Researchers were also able to synthesize a Sulphate based biofuel using this method which supports 100% combustion with recyclable carbon dioxide emission

Quantum dots are **tiny particles or nanocrystals of a semiconducting material** with diameters in the range of 2-10 nanometers (10-50 atoms). They were first discovered in 1980. **Quantum dots** display unique electronic properties, **intermediate between those of bulk semiconductors and discrete molecules**, that are partly the result of the unusually high surface-to-volume ratios for these particles. Potential applications include transistors, solar cells, LEDs, diode lasers and second-harmonic generation, quantum computing, and medical imaging

➢ **In A First, A Thermal Power Plant Decides To Use DSI Technology To Curb SO2 Emission**

- In a significant development, the NTPC's Dadri Power Plant is opting for a **Dry Sorbent Injection (DSI)** system for controlling sulphur dioxide (SO2) emissions. DSI is the practice of injecting a dry alkaline mineral into a flue gas stream to reduce acid gas emission.

- DSI offers advantages in comparison to traditional acid gas scrubber technology: lower capital cost, wide range of favourable operation conditions, and much lesser time for completing installation and commissioning.

- Burning of fossil fuels such as coal, oil and natural gas are the main source of sulfur dioxide emissions. Volcanic eruptions release large quantities of sulfur dioxide into the air. Hydrogen sulfide is released from marshes and regions in which biological decay is taking place.

➢ **IIT Madras Unveils Microscope To View Atoms Of A Material**

- The **Indian Institute of Technology-Madras** launched a remotely operable microscope, claimed to be the world's first of its kind, that would enable **precise view of atoms of a material.**

- The **modern LEAP (Local Electrode Atom Probe) instrument**, by the virtue of having Laser pulsing methods, enables investigation of a wide range of materials from metals, ceramics to semiconductors and even insulators with a very high acquisition rate of 5 Million ions per hour

- This facility will be able to provide atomic-scale insights into metallic materials thereby impacting a wide spectrum of industries ranging from steel to automobiles and energy to transportation sector.

➢ **World's Fastest Man-Made Spinning Object**

- The rotor can spin at more than **60 billion revolutions per minute**, making it world's fastest man-made object.
- This device has many applications, including material science. These devices were used to discover **gravitational constant and density of earth**, but it is believed that as they become more advanced, they will be able to study things like quantum mechanics and the properties of vacuum.

➢ **Newest Phase In Earth's History**

- Scientists have created a new phase in Earth's geological history and named it *Meghalayan*, after a **stalagmite from a cave in the Indian state of Meghalaya**.

- The stalagmite helped define climatic events 4,200 years ago, marking the beginning of the phase that continues till today.

- The Meghalayan Age began with a mega global drought that devastated ancient agricultural civilizations from Egypt to China. It is part of a longer period known as the *Holocene Epoch*, which reflects everything that has happened over the past 11,700 years.

- Two other ages — **the Middle Holocene Northgrippian Age and the Early Holocene Greenlandian Age** — with beginnings defined at climatic events that happened about **8,300 years and 11,700 years ago, respectively**.

- Meghalayan Age is unique because it is the first interval in Earth's geological history that coincided with a major cultural event, as agricultural societies struggled to recover from the shift in climate.

> This discovery was done by the **International Commission on Stratigraphy** of the **International Union of Geological Sciences (IUGS) and** is responsible for standardizing the geologic time scale and is an international non-governmental organization.

➢ **A Shot Of Formalin And A Sea Of Trouble**

- **Formalin, a cancer-inducing chemical,** is being used by unscrupulous agents in the fishing industry to increase the shelf-life of fish, especially in consignments meant for other States**.**

- Other chemicals too are used to extend the "freshness" of the fish. **Sodium benzoate** was a preservative that was mixed when the ice was formed. **Ammonia** is also added to the ice, but it is done to prevent the ice from melting.

- A chemical obtained by mixing water with formaldehyde, formalin, is applied on fresh catch to increase its shelf life and sensory attributes like colour. According to the Food Safety and Standards of India (FSSAI), regulation 2011, **formalin is not permitted for use in foods.**

- **Central Institute of Fisheries Technology (CIFT)** has developed readily available test kits, the kits help test for formalin and ammonia.

- **Formaldehyde occurs naturally in plants and animals, as a result of their own metabolism**. For instance, in vegetables, 20 to 60 mg formaldehyde per kg is present and 5 to 140 mg in a kilo of fish depending on the type. As the chemical is water soluble, it dissolves in water and can be removed by cleaning and cooking the vegetable or meat properly.

- In 2017, **Operation Sagar Rani** was started by the food safety department along with the state fisheries department to create awareness and find evidence of formalin adulteration.

- **The European Food Safety Authority recommends an oral exposure of 100mg formaldehyde per day**. But when it is applied as a preservative, the levels differ, causing health implications such as severe abdominal pain, vomiting, coma, renal injury and death.

➢ **Repurpose Used Cooking Oil (RUCO) Initiative**

- The **Food Safety and Standards Authority of India (FSSAI)** has launched **RUCO,** an initiative that will enable **collection and conversion of used cooking oil to bio-diesel.**

- FSSAI is also looking to introduce regulations to ensure that companies that use large quantities of cooking oil hand it over to registered collecting agencies to convert it into biofuel. **E.g., McDonald's** has already started converting used cooking oil to biodiesel from 100 outlets in Mumbai and Pune

- Further the regulations prescribe the **limit for Total Polar Compounds (TPC)** to be a **maximum 25%**, beyond which the cooking oil is unsafe for consumption.

- The regulator is implementing an **Education, Enforcement and Ecosystem (EEE) strategy** to divert **UCO** from the food value chain and curb current illegal practices.

- A litre of waste cooking oil can produce 850 to 950 ml of biodiesel depending on the quality of the raw material used. The fuel is **produced using a technique** called **trans esterification (conversion of carboxylic acids to esters using acid and alcohols).**

- **Biodiesel is a diesel fuel that is made by reacting vegetable oil (cooking oil) with other common chemicals.** Biodiesel may be used in any diesel automotive engine in its pure form or blended with petroleum-based diesel

> **Food Safety and Standards Authority of India (FSSAI)** is an **autonomous body** established under the Ministry of Health & Family Welfare, Government of India. The FSSAI has been **established under the Food Safety and Standards Act, 2006** which is a consolidating statute related to food safety and regulation in India. FSSAI is responsible for protecting and promoting public health through the regulation and supervision of food safety.

➢ **Thermal Battery Plant Unveiled In Andhra**

- In a bid to go green, the world's first thermal battery plant was unveiled in Andhra Pradesh. The battery plant will be operated by the Bharat Energy Storage Technologies Pvt Ltd (BEST)
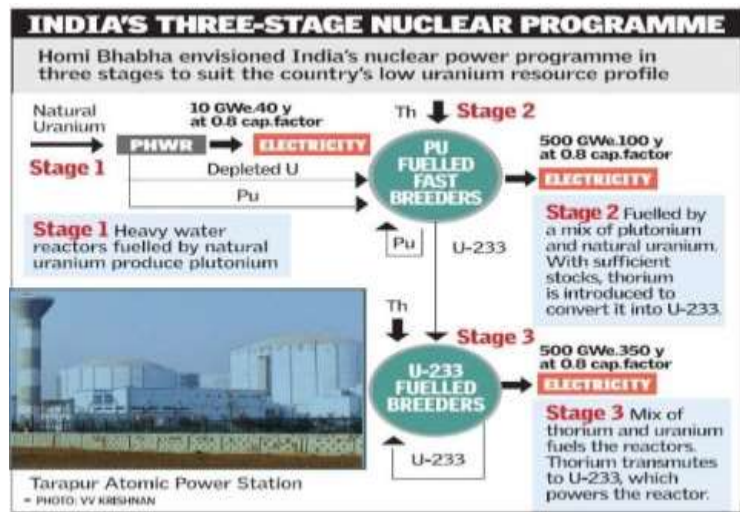
- Hailed as the perfect alternative to non-renewable energy sources, **thermal energy is considered to be even better than solar energy**. Solar batteries cannot be charged or utilized to their optimum potential after sunset or even when the skies are densely clouded

- **Lithium batteries**, which are widely used currently, **have a heavy carbon footprint** and can be expensive as they only last approximately 6-7 years.

- A thermal energy battery is a physical structure used for the purpose of storing and releasing thermal energy. Such a thermal battery allows energy available at one time to be temporarily stored and then released at another time.

➢ **Dickinsonia**

- Scientists have discovered an *ancient fossil of the earliest animal* on geological record **Dickinsonia — a strange oval creature with rib like segments running along its body that lived on Earth 558 million years ago.**

- The animal, which grew up to 1.4 metres in length, was part of the **Ediacaran Biota (earliest animal group)** that lived on Earth 20 million years prior to the Cambrian explosion of modern animal life.

- **The Cambrian explosion** is the term **given to the period of time** in history when complex **animals and other macroscopic organisms** such as molluscs, worms, arthropods and sponges **began to dominate the fossil record**.

- Researchers **found the Dickinsonia fossil** so well-preserved in a remote area near the **White Sea in the northwest of Russia**, that the **tissue still contained molecules of cholesterol**, **a type of fat that is the hallmark of animal life**.

➢ **Apsara U Reactor**

- Nine years after Apsara (the country's first and oldest atomic reactor) was shut down, **the Bhabha Atomic Research Centre (BARC)** has set in motion a higher capacity version **Apsara-upgraded (U).**

- **Indigenously constructed, Apsara U is a swimming pool type research reactor** that uses plate type dispersion fuel elements made of **low enriched uranium.**

INDIA'S THREE-STAGE NUCLEAR PROGRAMME

Homi Bhabha envisioned India's nuclear power programme in three stages to suit the country's low uranium resource profile

Tarapur Atomic Power Station
= PHOTO: VV KRISHNAN

Apsara
- Apsara, in addition to being the **first nuclear research reactor in India** that reached criticality, in August 1956, was also **the first in Asia**.
- A light water swimming pool-type reactor with a maximum power output of one megawatt thermal (MWT) was inaugurated by then Prime Minister Jawaharlal Nehru.
- The reactor was designed by the BARC and built with assistance from the **United Kingdom**.
- The production of radioisotopes in the country commenced with the commissioning of Apsara.

➢ **Acinetobacter Junii**

• **Researchers from the University of Delhi and Indian Institute of Technology (BHU),** Varanasi, have successfully degraded toluene into less-toxic byproducts by using a bacteria – Acinetobacter Junii isolated from soil and effluents near an oil refinery**.**

• **Toluene** is one of the petrochemical wastes that get released without treatment from industries such as refineries, paint, textile, paper and rubber.

• **It has been reported to cause serious health problems to aquatic life, and studies point that it has** genotoxic and carcinogenic effects on human beings.

• The researchers also examined the pathway by which the bacteria were doing the degradation and found it to be **general aerobic biodegradation** pathway unlike most waste degradation studies that use bacteria that grow in an anaerobic environment.

➢ **India International Science Festival**

• **The 4th edition of India International Science Festival**, jointly organised by Ministry of Science and Technology, Ministry of Earth Sciences, and Vijnana Bharati, was held in Lucknow**.**

• The **1st IISF was held at Indian Institute of Technology (IIT) New Delhi in 2015**.

• **The Global Indian Science & Technology Stakeholders Meet (GIST), Industry Academia Meet and Science & Technology for Harnessing Innovations (SATHI) - A National startup entrepreneurship** summit and Student Science Village being some of the important events.

• The **Global Indian Science & Technology Stakeholders Meet (GIST), Industry Academia Meet and Science & Technology for Harnessing Innovations (SATHI)** - A National startup entrepreneurship summit and Student Science Village being some of the important events.

➢ **India's Timekeeper Says Country Needs Two Time Zones**

• A new analysis by the **National Physical Laboratory (NPL) - India's official timekeeper** - has supported a **long standing demand for a separate time zone for eastern states** - Assam, Meghalaya, Nagaland, Arunachal Pradesh, Manipur, Mizoram, Tripura – and Andaman and Nicobar Islands.

• At present, the country observes a single time zone based on the longitude passing through 82°33′E. This, under the new proposal, will become IST-I, covering the regions falling between longitudes 68°7′E and 89°52′E. And IST-II (UTC + 6:30 h, represented by longitude passing through 97°30′E) will cover the regions between 89°52′E and 97°25′E. This will include all the northeastern states as well as Andaman and Nicobar Islands.

• The additional time zone for the northeast takes into account several factors like impact of sunrise and sunset timings on biological activities of people; synchronising sunrise and sunset timings with office hours; minimisation of spatial extension at the proposed border of time demarcation; and feasibility of technically managing two time zone.

• The demarcation line will pass through the border of West Bengal and Assam and will be very narrow. **Only two railway stations - New Cooch Behar and Alipurduar – will need to be managed for time adjustment**. Since the signaling system is not fully automatic, two time zones will not cause any disruption in railway operations.

- **NPL, a laboratory under the Council of Scientific and Industrial Research (CSIR), is responsible for generation and dissemination of the IST** and houses an ensemble of time clocks synched with the UTC at International Bureau of Weights and Measurers (BITM) in France.

- **Daylight saving time (DST),** also daylight savings time or daylight time also summer time is the **practice of advancing clocks during summer months so that evening daylight lasts longer,** while sacrificing normal sunrise times.

➢ **World's First Hydrogen Train**

- **Germany** has rolled out the world's first hydrogen-powered train, signalling the start of a push to challenge the might of polluting diesel trains with an eco-friendly technology.

- Nicknamed **Hydrail**, these trains are called **Coradia iLint trains** and have been manufactured by **Alstom**, one of Europe's largest railway manufacturers.

- **The train has batteries made of lithium-ion** that is used in mobile phones and home appliances. Additionally, **the train** is equipped with **fuel cells** that produce electricity through a **combination of hydrogen and oxygen**, a process that leaves steam and water as the only emissions. Excess energy is stored in lithium ion batteries on board the train.

A **fuel cell** is **an electrochemical cell that converts the chemical energy** from a fuel into electricity through an electrochemical reaction of hydrogen fuel with oxygen or another oxidizing agent**. Fuel cells are different from batteries in requiring a continuous source of fuel and oxygen (usually from air) to sustain the chemical reaction**, whereas in a battery the chemical energy comes from chemicals already present in the battery. Fuel cells can produce electricity continuously for as long as fuel and oxygen are supplied.

➢ **Report on Food Fortification by FSSAI**

• **FSSAI has operationalized standards for fortification of:**

    ✓ wheat- flour-rice (with iron, Vitamin B12 and folic acid)

    ✓ milk & edible oil (with Vitamins A and D)

    ✓ Double-fortified salt (with iodine and iron).

• It has also introduced the +F logo to identify fortified foods.

• **Food fortification is the deliberate addition of one or more micronutrients to food so as to correct or prevent a deficiency and provide a health benefit.**

• **The deficiency of micronutrients is also known as "hidden hunger**

• Under Food Safety and Standards (Prohibition and Restriction on Sales) Regulations, 2011**, sale of only iodized salt is permitted** for direct human consumption. **Further, Food Safety and Standards (Food Product Standards and Food Additives) Regulations, 2011 provide that Vanaspati shall contain synthetic Vitamin A.**

• Besides, Ministry of Women and Child Development and Ministry of Human Resource Development have advised the use of double fortified salt (iron and iodine), wheat flour (with iron, folic acid and vitamin B-12) and edible oil with (vitamin A and D) under their Schemes i.e. Integrated Child Development Scheme and Mid-day Meal Scheme**.**

➢ **International Centre For Humanitarian Forensics**

• The world's first of its kind and state-of-the-art **International Centre for 'Humanitarian Forensics' (ICHF)** was launched at the Gujarat Forensic Sciences University in **Gandhinagar, Gujarat.**

• The Centre will aid humanitarian efforts during emergencies and natural disasters such as the work carried out by Red Cross during the Gujarat Earthquake**.**

➢ **Union Ministry Of Home Affairs With The Support Of The United Nations Development Programme (UNDP) Has Prepared A Disaster Risk Index For India First Time Ever.**

• The disaster risk index would map hazards and vulnerabilities including economic vulnerabilities across 640 districts and all states including UTs.

• Capacity building by Gujarat, Tamil Nadu, Assam, Tripura and Himachal Pradesh has lowered their net risk to population and economic losses while States like UP, MP are considered high-risk states despite facing lower natural hazard possibilities due to high vulnerability and low capacity building.

• **Maharashtra** is ranked number 1 in the Disaster Risk index of states, followed by **West Bengal and Uttar Pradesh in 2018,**

DISASTER-PRONE

High-Risk Districts on Disaster

District	State	Rank
North 24 Parganas	West Bengal	1
Pune	Maharashtra	2
South 24 parganas	West Bengal	3
Thane	Maharashtra	4
Hoogly	West Bengal	5
Howrah	West Bengal	6
Bangalore	Karnataka	7
Nashik	Maharashtra	8
Gulbarga	Karnataka	9
Mumbai suburban	Maharashtra	10

Why Pune? On a scale of 10 it has scored 9.48 due to highest exposure to hazard and vulnerability, while its capacity to deal with risk is lower at 4.43 (out of 10). Pune is affected by drought (7.93 on 10), but lower than Nashik's at 8.35

North 24 Parganas scores 8.52 (out of 10) on exposure to hazard and vulnerability and 3.64 on capacity to deal with risk. On floods it scores 7.97 out of 10

South 24 Parganas scores 8.48 on risks and 3.64 for its capacity to deal with risks. Highest risk from cyclone, and scores 8.24

Disaster Risk Index of States

States	Rank
Maharashtra	1
West Bengal	2
UP	3
MP	4
Karnataka	6
Assam	7
Andhra	8
Gujarat	9
Bihar	10

Note: The All-India ranking of these states and districts has been assessed on six parameters: hazards; vulnerability; hazard-specific vulnerability; hazard & vulnerability exposure; capacity and risk

Source: MHA

while Delhi is most at risk among Union territories (UTs).

➢ **International Tourism Mart**

• The Ministry of Tourism, Government of India, in association with the Department of Tourism, Government of Tripura and the North Eastern States is organizing the 7th "International Tourism Mart" in Agartala, Tripura.

• *This is the 7th edition of the International Tourism Mart*, an annual event organised in the North Eastern region with the objective of highlighting the tourism potential of the region in the domestic and international markets.

• The International Tourism Marts are organised in the North Eastern States on rotation basis. The earlier editions of this mart have been held in Guwahati, Tawang, Shillong, Gangtok and Imphal.

➢ **Ramayana Express**

• The Shri Ramayana Express, a special tourist train to run on the Ramayana circuit to cover major spots related to the Hindu epic was recently flagged off from Safdarjung Railway Station in Delhi. The train will complete its journey till Rameswaram in Tamil Nadu, in 16 days covering all important destinations associated with the life of Lord Ram.

• **Ramayana Circuit is one of the fifteen thematic circuits identified for development under Swadesh Darshan scheme of Ministry of Tourism**. Sitamarhi, Buxar, Darbhanga in Bihar are among the fifteen sites identified initially for development under this circuit in the country.

• The 15 destinations are — Ayodhya, Shringverpur and Chitrakoot in Uttar Pradesh, Sitamarhi, Buxar and Darbhanga in Bihar, Chitrakoot in Madhya Pradesh, Nandigram in West Bengal, Mahendragiri in Odisha, Jagdalpur in Chhattisgarh, Bhadrachalam in Telangana, Rameshwaram in Tamil Nadu, Hampi in Karnataka and Nashik and Nagpur in Maharashtra.

➢ **Swadesh Darshan Scheme - Development of North East Circuit**

• The project "**Development of North East Circuit: Imphal & Khongjom**" being implemented under the **Swadesh Darshan Scheme of Ministry of Tourism**.

• The project covers two sites i.e. **Kangla Fort and Khongjom** and is the first project under **the Swadesh Darshan Scheme** being inaugurated in the country.

• Kangla Fort is one of the most important historic and archaeological site of Manipur located in the heart of the Imphal city. It served as the seat of Manipur's power till 1891.

• **Khongjom** is the place where the **last war of resistance of Anglo Manipur War of 1891** was fought.

Swadesh Darshan Scheme: It is one of the flagship scheme of Ministry of tourism for **development of thematic circuits** in the country in a planned and prioritised manner .

Under this scheme, **13 thematic circuits have been identified** for development. **They are Buddhist Circuit, North-East India Circuit, Coastal Circuit, Himalayan Circuit, Krishna Circuit, Desert Circuit, Eco Circuit, Wildlife Circuit, Tribal Circuit, Rural Circuit, Spiritual Circuit, Ramayana Circuit, and Heritage Circuit**

➤ **First Tribal Circuit Under Swadesh Darshan**

- Govt has launched country's first tribal circuit project connecting 13 tourism sites in Chhattisgarh.The project is being implemented under Tourism Ministry's Swadesh Darshan scheme.

- Under this, Ministry of Tourism provides **Central Financial Assistance (CFA)** to State/UT's for various tourism projects.

➤ **Union Government Approves Mechanism For Sale Of Enemy Shares**

- The Union Cabinet has approved a mechanism for sale of enemy shares which at the current price is estimated at around Rs 3,000 crore. Sale proceeds are to be deposited as disinvestment proceeds in the government account maintained by the Ministry of Finance.

- The Department of Investment and Public Asset Management has been authorised to sell the shares.

- A total number of 6,50,75,877 shares in 996 companies of 20,323 shareholders are under the custody of Custodian of Enemy Property of India (CEPI).

Enemy Properties

- When wars broke out between India and China in 1962, and India and Pakistan in 1965 and 1971, the central government took over properties of citizens of China and Pakistan in India under the Defence of India Acts. These Acts defined an 'enemy' as a country that committed an act of aggression against India, and its citizens.

- The properties of enemies in India were classified as enemy property. The properties included land, buildings, shares held in companies, gold and jewellery of the citizens of enemy countries. The responsibility of the administration of enemy properties was handed over to the Custodian of Enemy Property, an office under the central government.

Enemy Properties Act

- After the Indo-Pakistan War of 1965, the Enemy Property Act was enacted in 1968, which regulates such properties and lists the custodian's powers.

- The government amended the Act in the wake of a claim laid by the heirs of Raja Mohammad Amir Mohammad Khan, known as Raja of Mahmudabad, on his properties spread across Uttar Pradesh and Uttarakhand.

- The government has vested these properties in the Custodian of Enemy Property for India, an office instituted under the Central government.

➤ **National Sports University Bill, 2018**

- The Parliament has passed a Bill to replace an Ordinance promulgated in May to establish a National Sports University in **Manipur.**

- The key objectives of the university are research, development and dissemination of knowledge in physical education & sports sciences and strengthening training programs

- The University would **offer diplomas, bachelor and master's degree in various fields including sports management and sports science**.

➢ **Novel Initiative To Encourage Science Communication: AWSAR**

- **Augmenting Writing Skills for Articulating Research (AWSAR) initiative** will each year reward 100 best articles by PhD students with cash prize of Rs 1 Lakh each & a certificate of appreciation.

- Through this the **Department of Science and Technology (DST**) plans to reward students who write popular articles about their research. The articles can either be submitted to DST directly or published in newspapers.

➢ **Law Panel Favours Legalizing Gambling With Regulations**

- The Law Commission report titled **Legal Framework: Gambling and Sports Betting including Cricket in India**, leaves the final call to Parliament and the state legislatures and recommends various ways to regulate the betting market.

- The report was triggered by the Supreme Court which, while considering the *Lodha Committee report* on cricket, asked the Commission to examine the issue

- Betting and gambling are state subjects. *Goa and Sikkim* have legalized many forms of betting and gambling.

- The Commission concluded that legalizing betting and gambling is not desirable in India in the present scenario. Therefore, the state authorities must ensure enforcement of a complete ban on unlawful betting and gambling. But it immediately adds that since a total ban isn't practical, regulation is a good approach provided the Parliament legalizes betting.

➢ **Nobel Prize**

- Nobel Prize is awarded annually from a fund bequeathed by the Swedish inventor and industrialist **Alfred Nobel**. The prize is widely regarded as the most prestigious award given for intellectual achievement in the world.

- The **Royal Swedish Academy of Sciences confers the prizes for physics, chemistry, and economics**. The **Karolinska Institute** confers the prize for physiology or medicine and the **Swedish Academy** confers the prize for literature.

- **The Norwegian Nobel Committee based in Oslo confers the prize for peace'**

Nobel in Physiology/Medicine:

- The **2018 Nobel Prize in Physiology or Medicine** has been jointly awarded to **James P. Allison and Tasuku Honjo.** The two immunologists were awarded the Prize for their **discovery of cancer therapy by inhibition of negative immune regulation**.

- By stimulating the inherent ability of our immune system to attack tumor cells, this year's Nobel Laureates have established an entirely new principle for cancer therapy**.**

Nobel in Chemistry:

- One half of the **Nobel Prize in Chemistry 2018** was awarded to **Frances H. Arnold "for the directed evolution of enzymes**" and the **other half jointly to George P. Smith and Sir Gregory P. Winter "** for the **phage display of peptides and antibodies**.

- The Laureates have been inspired by the **power of evolution and used the same principles -- genetic change and selection** -- to develop proteins that solve mankind's chemical problems.

Nobel Prize for Physics:

- **Awarded to Arthur Ashkin of the US, Gerard Mourou of France and Donna Strickland of Canada, making her the third woman to receive the prestigious award.**

- Arthur Ashkin received the prize for the **optical tweezers** and their application to biological systems.

- Ashkin's optical tweezers are able to grab particles, atoms, viruses and other living cells with their laser beam fingers

- **Gerard Mourou and Donna Strickland** were jointly awarded for their method of generating **high-intensity, ultra-short optical pulses.**

- They **created ultrashort high-intensity laser pulses** without destroying the amplifying material, thus **paving the way towards the shortest and most intense laser pulses ever created by mankind.**

Strickland became the first woman to receive the award in 55 years after Marie Curie won it in 1903 and Maria Goeppert-Mayer in 1963.

Nobel Peace Prize

- The 2018 Nobel Peace Prize has been awarded to campaigners against rape in warfare – **Nadia Murad and Denis Mukwege.**

- **Ms Murad endured three months as a sex slave at the hands of IS militants**. She was bought and sold several times and subjected to sexual and physical abuse during her captivity. **After escaping, she became an activist for the Yazidi people**, campaigning to help put an end to human trafficking and calling on the world to take a tougher line on rape as a weapon of war.

- She is the *first Iraqi to win the award* and was also named the UN's first goodwill ambassador for survivors of human trafficking**. Mr. Mukwege** has spent decades helping **rape victims in** the **Democratic Republic of Congo.**

- He has won a number of international prizes, **including the 2008 UN Human Rights Prize, and was named African of the Year in 2009.**

➢ **World Population Day**

- **July 11** was established as World Population Day in 1989 by the **United Nations**, and since then it has been celebrated on this date every year.

- This year marks the 50th anniversary of the *1968 International Conference on Human Rights*, where *family planning* was, for the first time, globally affirmed to be a human right. The conference's outcome document, known as the **Tehran Proclamation**, stated that parents have a basic human right to determine freely and responsibly the number and spacing of their children

- **Theme for 2018**: *"Family Planning is a Human right.*

➢ **World Habitat Day**

- **In 1985, the United Nations designated the first Monday of October every year as World Habitat Day**. The idea is to reflect on the state of our towns and cities and the basic right of all to adequate shelter. It is also intended to remind the world of its collective responsibility for the future of the human habitat

- The focus of this year's World Habitat Day celebrations is taking action to address the municipal solid waste management challenge. This year's theme is ***Municipal Solid Waste Management*** with a slogan ***Waste-wise cities.***

➢ **Bru Community**

- The **Bru community**, once spread across **Mamit and Kolasib districts of Mizoram,** were **forced to flee their native land in 1997** after animosity between the Bru and the Mizos turned violent.

- Less than a fortnight after Union Home Minister announced the signing of an agreement that would repatriate displaced Bru families living in Tripura since 1997 to Mizoram before September 30, the **Mizoram Bru Displaced People's Forum (MBDPF) withdrew from the deal**, saying the terms agreed upon between the governments of Mizoram, Tripura and Ministry of Home Affairs (MHA) were not acceptable to the Bru community.

- The deal had provisions related to voting rights, cash assistance, house building assoistance, etc.

- The displaced Brus took refuge in a town called Kanchanpur in northern Tripura, on the Mizoram-Tripura border. Now, they are **spread across seven refugee camps** on the Jamui hills, which separate Tripura from Mizoram and Bangladesh.

➢ **Postal Highway**

- The Indian Government has released additional NPR 470 million (Nepali Rupees) for the Postal Highway being constructed in Southern Plains of Nepal

- **Postal Highway is also called Hulaki Rajmarg** which runs across the Terai region of Nepal, from Bhadrapur in the east to Dodhara in the west, cutting across the entire width of the country.

- **It is oldest highway in Nepal constructed by Juddha Shumsher Jung Bahadur Rana** & Padma Shumsher Jung Bahadur Rana to aid transportation and facilitate postal services throughout the nation.

- The Postal Highway, **previously used by postal service staff to deliver mail, stretches from the east to the west and is 975 kms long**. When complete, the highway will link all 20 districts in the Tarai.

➢ **Global Hunger Index**

- The Global Hunger Index was recently released. It is a peer-reviewed publication released annually **by Welthungerhilfe and Concern Worldwide.**

- Overall, India has been ranked at 103 out of 119 countries in the Index, with hunger levels in the country categorised as "serious". Its ranking has dropped three places from last year.

- The first indicator is **undernourishment**, which is the share of the population which is undernourished and reflects insufficient caloric intake.

- **The next three indicators use data for children under five**: **child wasting** (low weight for height),reflecting acute under-nutrition; **child stunting** (low height for age), reflecting chronic undernutrition; and **child mortality.**

- **Many neighbouring countries** like China (25th), Sri Lanka (67th), Myanmar (68th), Nepal (72nd) and Bangladesh (86th) stood ahead of India.

➢ **Global Innovation Index (GII) 2018**

• At the India launch of Global Innovation Index 2018 in New Delhi, **NITI Aayog announced that it will join hands with CII(Confederation of Indian Industry) to drive innovation in the country.**

• GII is published by **Cornell University, INSEAD, and the World Intellectual Property Organisation**, in partnership with other organisations and institutions.

• This year's theme is **Energizing the World with Innovation** which looks at innovation taking place in the energy sector around the world.

• India's rank on the GII has improved from 60th in 2017 to **57th in 2018**. India has been consistently climbing the GII ranking for the past two years.

➢ **Human Development Report**

• In the latest human development Index (HDI**) released by the UNDP, India is ranked 130 out of 189 countries.**

• **Norway, Switzerland, Australia, Ireland and Germany lead the ranking.**

• **Niger, the Central African Republic, South Sudan, Chad and Burundi have the lowest scores.**

• **South Asia experienced the fastest HDI growth among developing regions** with a 45.3 %

• increase since 1990. South Asia has the widest gap between men and women in HDI at 16.3%.

• **India's HDI value for 2017 is 0.640**, which put the country in the **medium human development category.**

Human Development Index (HDI)
The HDI is the composite measure of every country's attainment in three basic dimensions:
(1) standard of living measured by the gross national income (GNI) per capita,
(2) health measured by the life expectancy at birth, and
(3) education levels calculated by mean years of education among the adult population and the expected years of schooling for children.

➢ **Human Capital Rankings**

• According to a study published in the Lancet journal, **India was ranked 158 among 195** countries on the 'human capital' score. **Parameters: Human capital is computed using four key parameters: (1) Life Expectancy, (2) Functional Health, (3) Years of Schooling and (4) Learning.**

• The study measures Human Capital of 195 countries during the 1990-2016 period.

• **The study was released by University of Washington's Institute for Health Metrics and Evaluation (IHME) which was published in the international medical journal Lancet.**

➢ **Human Capital Index**

• The World Bank has released a Human Capital Index (HCI) as part of the **World Development Report (WDR) 2019**. Broader theme of WDR this year is "**The Changing Nature of Work**".

• **This index measures the amount of human capital that a child born today can expect to attain by age 18**, given the risks of poor health and poor education that prevail in the country where he/she was born.

- According to the World Bank, Human capital consists of the knowledge, skills, and health that people accumulate over their lives, enabling them to realize their potential as productive members of society.

- India is ranked **115 among 157 countries** and is placed lower than its Asian peers viz. Nepal, Sri Lanka, Myanmar and Bangladesh. **Singapore was ranked number one** in the world followed by followed by South Korea, Japan, Hong Kong and Finland.

➤ **International Day Of Sign Languages**

- International Day of Sign Languages is celebrated annually across the world on **23 September** every year along with International Week of the Deaf.

- This year's theme is **"With Sign Language, everyone is Included!"**

- World Federation of the Deaf (WFD) is an international non-governmental organization that aims to promote the Human Rights of Deaf people worldwide, by working closely with the United Nations (with which it has consultative status).

- It was established in **1951** and is based in **Helsinki, Finland Trust**

➤ **Trust Status For Bharat Ke Veer**

- Union Government has been granted the status of a registered trust to 'Bharat ke Veer' by making it exempt from income tax under form 80 (g).

- Bharat Ke Veer portal was launched by the **Union Home Ministry in 2017.**

- **It facilitates online donation**
    - directly to the families of Central Armed Police Force (CAPF) martyrs who sacrificed their lives for the country in line of duty from January 1, 2016
    - or towards the "Bharat Ke Veer" corpus which would be used to decide to disburse the fund equitably to the Braveheart's family on need basis.

➤ **Punch Tantra**

- Union Minister for Tribal Affairs introduced the **World Boxing Champion Ms. Mary Kom** as the Brand Ambassador of "**Tribes India**" and also launched the "**Punch Tantra**" Diwali collection.

- **The Punch Tantra range of tribal artefacts includes handlooms and handicrafts specially introduced for the coming Diwali and festival season.**

- In March 2018, Union Ministry for Tribal Affairs launched 'e-Tribes: Tribes India' as an initiative for digital commerce for Tribals. This includes e-commerce portal of TRIFED, www.tribesindia.com and M-commerce, android app '**Tribes India'.**

➤ **New Cyber University**

- **The Maharashtra Government** has taken steps towards setting up a new cyber university. This university will be dedicated to mitigating cyber threats, which will train 3,000 professionals to fight online space cyber attacks, internet crimes, and conduct cyber forensics.

- It will also impart training in 15 other Internet of Things (IoT) areas such as Data Analytics and Artificial Intelligence (AI).
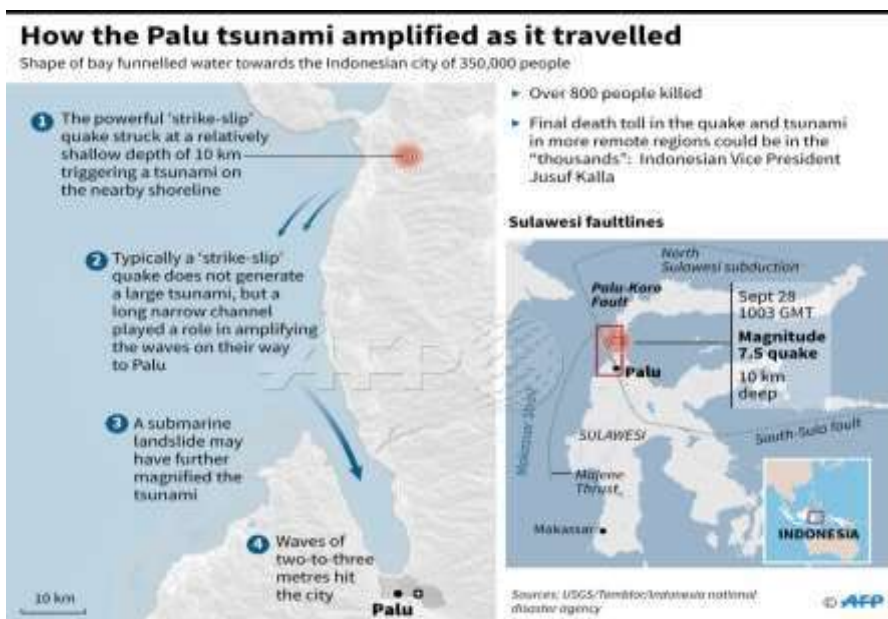
➢ **e-Sahaj Portal**

• The government has launched an online 'e-Sahaj' portal for grant of Security Clearance.

• The portal will facilitate an applicant to submit application online and also to view the status of his application from time to time.

• There were several projects which were stuck for lack of approval by Intelligence Bureau (IB) or other agencies including the State police. Hence, in order to speed up the process, government had formulated a new policy in 2015.

➢ **India's First Indigenous Anti-nuclear Medical Kit**

• Scientists at **Institute of Nuclear Medicine and Allied Sciences (INMAS)** have developed India's first indigenous medical kit that may ensure protection from serious injuries and faster healing of wounds resulting from nuclear warfare or radioactive leakage.

• The kit has over 25 items, including radio-protectors that provide 80-90 per cent protection against radiation and nerve gas agents, bandages that absorb radiation as well as tablets and ointments.

➢ **Science Of Indonesia's Surprise Tsunami**

• 7.5-magnitude earthquake shook the **Indonesian island of Sulawesi**. The **7.5-magnitude** earthquake appears to be the result of what's known as a **strike-slip fault,** which takes place as two blocks of crust grind against one another, largely in a horizontal direction.

• **Tsunamis** race across the sea at up to 500 miles (805 kilometers) an hour—about as fast as a jet airplane. At that pace, they can cross the entire expanse of the Pacific Ocean in less than a day .And their long wavelengths mean they lose very little energy along the way.

• **In Deep Ocean, tsunami waves** may appear only a foot or so high. But as they approach shoreline and enter shallower water they slow down and begin to grow in energy and height. The tops of the waves move faster than their bottoms do, which causes them to rise precipitously.

• **A tsunami's trough, the low point beneath the wave's crest, often reaches shore first.**

How the Palu tsunami amplified as it travelled

When it does, it produces a vacuum effect that sucks coastal water seaward and exposes harbor and sea floors. **A tsunami** is usually composed of a **series of waves, called a wave train**, so its destructive force may be compounded as successive waves reach shore.

- The **Pacific tsunami Warning System**, **a coalition of 26 nations** headquartered in **Hawaii**, maintains a web of seismic equipment and water level gauges to identify tsunamis at sea. Similar systems are proposed to protect coastal areas worldwide.

➤ **Lonar Lake And St. Mary's Island Soon to Become Global Geoparks**

- **The Geological Survey of India (GSI)** has laid out a plan to commemorate heritage locations in Maharashtra and Karnataka as Global Geoparks. **It is a tag similar to that of "World Heritage Site" wherein the geological features are highlighted on the global stage.**

- **A geopark is basically a unified area that initiates the protection and use of geological heritage in a sustainable way, promoting economic well-being of the people who live ther**e, and also of course putting it on the global map thus initiating geo-tourism.

- **An aspiring Global Geopark must have a few pre-requisites** for it to be accepted as a world heritage site. **The most important things** needed to be considered for the tag are**: a dedicated website, corporate identity, a comprehensive management plan; and protection, finance and partnership plans**.

> **St. Mary's Island**, declared a national geo-heritage site in 1975, is estimated to be an **88-million-year-old formation that goes back to a time when Greater India broke away from Madagascar.**
> **Lonar crater became a geo-heritage site in 1979**. It is relatively **young geologically, at just 50,000 years old**.
> A **meteorite** estimated to weigh two-million-tonnes slammed into the Earth, creating a 1.83-km diameter crater where the lake formed.

➤ **Rashtriya Ekta Divas**

- **Rashtriya Ekta Diwas** was observed on 31st October across the nation. It marks the occasion of the birth anniversary of Sardar Vallabhbhai Patel.

- **The government, in 2015, decided to observe Sardar Patel Jayanti Day as Ekta Diwas**. This occasion provides an opportunity to re-affirm the inherent strength and resilience of the nation to withstand the threats to its unity, integrity and security.

➤ **The Union Cabinet has approved renaming of Jharsuguda Airport in Odisha as "Veer Surendra Sai Airport, Jharsuguda".**

- **Veer Surendra Sai** who was a well-known freedom fighter and a tribal leader of Odisha.

- Born in 1809 in Khurda in Sambalpur, he was direct descendant of Madhukar Sai and was legally entitled to be crowned as king of Sambalpur after demise of king Maharaja Sai in 1827. But he was not acceptable to British power and ignored his claim for succession.

- He revolted against the British for throne after it allowed widow of Madhukar Sai Rani Mohan Kumari to succeed him and then followed by succession of Narayan Singh, a descendant of royal family but born of low caste as king of Sambalpur.

➢ **Turga Pumped Storage**

• **A Loan Agreement** was recently signed between **India and Japan** on Japanese Official Development Assistance loan for the construction of **Turga Pumped Storage (I) of Yen 29.442 Billion (Rs. 1817 crore approximately).**

• **The Turga Pumped Storage Project on Turga nala, a tributary of Subarnrekha river, is a closed loop type Pumped Storage Project located in Purulia district of West Bengal**

➢ **Palau Become First Country To Ban Sunscreen To Save Coral Reefs**

• **The Western Pacific nation of Palau** has become the first country to ban many kinds of sunscreen, in a move to protect its coral reefs from chemicals that scientists say cause significant damage.

• Under the ban, which will take effect in 2020, "reef-toxic" sunscreen — defined as containing one of 10 prohibited chemicals, a list that could grow later — can be confiscated from tourists when they enter the country, and retailers who sell it can be fined up to $1,000.

➢ **Central Tribal University**

• Union Cabinet has approved setting up of **Central Tribal University in Andhra Pradesh** after necessary amendment in the Central Universities Act, 2009.

• **It will be set up in Relli village of Vizianagaram** District of Andhra Pradesh. It will be established under Thirteenth Schedule to Andhra Pradesh Reorganisation Act, 2014.

➢ **World Standard's Definition Of Kilogram Now Redefined**

• Scientists have changed the way the kilogram is defined. The decision was made at the General Conference on Weights and Measures. The new definitions will come into force on 20 May 2019.

• **Currently, it is defined by the weight of a platinum-based ingot called "Le Grand K"** which is locked away in a safe in Paris.

• *General Conference on Weights and Measures (CGPM)* is the highest international body of the world for accurate and precise measurements and comprises of 60 countries including India and 42 Associate Members.

How does the new system work?

• Electromagnets generate a force. Scrap-yards use them on cranes to lift and move large metal objects, such as old cars. The pull of the electromagnet, the force it exerts, is directly related to the amount of electrical current going through its coils. There is, therefore, a direct relationship between electricity and weight.So, in principle, scientists can define a kilogram, or any other weight, in terms of the amount of electricity needed to counteract the weight (gravitational force acting on a mass).

➢ **Centre for Science and Environment (CSE),** the New Delhi (India)-based independent research and advocacy think tank, has been named the recipient of the prestigious **Indira Gandhi Prize for Peace, Disarmament and Development for the year 2018.**

➢ **Amnesty International** has stripped **Myanmar's leader Aung San Suu Kyi** of its highest honour, the **'Ambassador of Conscience' award**, over her indifference to atrocities committed by the Myanmar military against and increasing intolerance of freedom of expression.

➢ **Rs. 75 Commemorative coin to mark 75th Anniversary of Tricolor hoisting By Bose**

• The Union Ministry of Finance has decided to release a Rs 75 commemorative coin on the occasion of 75th anniversary of the hoisting of Tricolour for the first time by Netaji Subhash Chandra Bose at Port Blair.

• During his visit to Andaman in on December 30, 1943, Subhash Chandra Bose hoisted the Tricolor for the first time at Cellular Jail of Port Blair, much before India attained Independence declaring the island as the free territory from the British rule.

• On the same occasion, he announced the freedom of Andaman & Nicobar Islands, the first Indian Territory, from the British rule. The island at that time was liberated from British rule by Japan which captured it during the World War – II.

• **Bose named Andaman Island as Shaheed and Nicobar Island as Swaraj and appointed INA General AD Loganathan as the governor of the Islands**. Azad Hind Government was not merely a Government in Exile anymore but had its own land, own currency, civil code and stamps.

➢ **India's First Elephant Hospital opens in Mathura**

• **India's first specialized hospital for elephants has been formally opened in Mathura**.

• **The unique medical centre offers wireless digital X-ray, laser treatment, dental X-ray, thermal imaging, ultrasonography, hydrotherapy and quarantine facilities**.

• Located close to the elephant conservation and care centre, the hospital is designed to treat injured, sick or geriatric elephants and is equipped with a medical hoist for lifting elephants, as also an elephant restraining device with a dedicated indoor treatment enclosure for long duration medical procedures.

➢ **Quadricycles**

• The Ministry Of Road Transport And Highways has approved the sale of quadricycles for personal use*.

• **Quadricycle** – a vehicle of the size of a 3-wheeler but with 4 tyres and fully covered like a car. It has an engine like that of a 3-wheeler.

• **Ministry of Road Transport & Highways** notified the insertion of **'Quadricycle'** as a **'non transport'**vehicle under the **Motor Vehicles Act 1988**. Quadricycles were only allowed for transport usage under the Act, but now has been made usable for non-transport also (Personal use)

➢ **Odisha now has Lexicon for rare tribal language**

• The Odisha government has come out with lexicons of 21 tribal languages.

• **The bilingual tribal dictionaries will be used in multilingual education (MLE) initiated by the State government at the elementary level in tribal-dominated district**s

➤ **Heat-Wave**

- The **Lancet Countdown 2018 report** has asked the Indian policy makers to take a series of initiatives to mitigate the increased risks to health, and the loss of labour hours due to a surge in exposure to heat wave events in the country over the 2012-2016 period.

- From 2014-2017, **the average length of heatwaves in India ranged from 3-4 days** compared to the global average of 0.8-1.8 days, and Indians were exposed to almost 60 million heatwave exposure events in 2016, a jump of about 40 million from 2012.

- The **agriculture sector was more vulnerable compared to the industrial and service sectors** because workers there were more likely to be exposed to heat.

Important Recommendations (Lancet Study)

✓ Identify *"heat hot-spots"* through appropriate tracking of meteorological data.

✓ Promote "*timely development and implementation of local Heat Action Plans* with strategic inter-agency co-ordination and a response which targets the most vulnerable groups."

✓ *Review existing occupational health standards, labour laws and sectoral regulations* for worker safety in relation to climatic conditions.

➤ **Sustainable Blue Economy Conference in Nairobi , Kenya**

- **The first Sustainable Blue Economy Conference was held in Nairobi, capital of Kenya**. It was organized by Kenya and co-hosted by Japan and Canada.

- "India endorses the growth of the Blue Economy in a sustainable, inclusive and people centered manner through the framework of the **Indian Ocean Rim Association (IORA)**".

➤ **Inclusive Wealth Report 2018**

- *Inclusive wealth index, as part of the Inclusive Wealth Report 2018* has been released by the UN Environment and partners.

- *The Inclusive Wealth Report (IWR)* is a biennial **effort led by the UN Environment** to evaluate the capacities and performance of the nations around the world to measure sustainability of economy and wellbeing of their people.

- The inclusive wealth index is a tool assessing a nation's ability to look after its wealth in a way that is sustainable and safeguards its future generations.

- **The biennial report finds The Republic of Korea, Singapore and Malta as the nations that have had the most economic growth**. The report also revealed that carbon damage is relatively larger in high-income countries.

➤ **HAUSLA-2018**

- The **Ministry of Women and Child Development** has launched the **National Festival for Children of Child Care Institutions (CCIs) – Hausla 2018**.

- The inter-Child Care Institution festival draws children from 18 States for the various events like painting competition, athletics meet, football, chess competition and speech writing as part of the Festival.

- **Theme of the Event – "Child Safety".**

➢ **FIFA Football World Cup 2018**

• **The World Cup in 2018 mark the first time Russia has ever hosted this event**

• The World Cup has been played 20 times, **Brazil holds the most titles with five**. Italy and Germany are close behind with four each.

• **France** won the world Cup for the second time. **Croatia** was runner up.

• **Zabivaka™(the Wolf)** means "the one who scores" in Russian, **is the official Mascot**

• The first World Cup was played in 1930. Uruguay was both the tournament host and winner that year.

• **FIFA introduced Video Assistant Referee (VAR)** for the first time in in the 2018 FIFA World Cup.

• **Golden Boot winner:** Harry Kane(England)(Leading Goal scorer)

• **Golden Glove:** Thibaut Courtois (Belgium)

• **Golden Ball :** Luka Modrić (Croatia)

• **Young Player Award:** Kylan Mpappe

➢ **India finished third in the medals tally at the Commonwealth Games 2018, held at Gold Coast,Australia, with 66 medals (26 Gold, 20 Silver and 20 Bronze). Only Australia(1ˢᵗ) with 198 medals and England(2ⁿᵈ) with 136 were ahead.**

• India's maximum medals came from shooting (16), followed by wrestling (12) and weightlifting (9).

• Manika Batra made history by becoming the first Indian woman to win an individual table tennis Gold at the Games.

• Indian shooter Anish Bhanwala, aged 15, created history by becoming the country's youngest ever Gold medal winner in the Commonwealth Games, in the men's 25m rapid fire pistol.

• Teenager Deepak Lather from Haryana became the youngest Indian weightlifter to claim a Commonwealth Games medal.

• Neeraj Chopra from Haryana became the first Indian javelin thrower to claim a Gold medal at the Games

• Weightlifter Mirabai Chanu, who claimed India's first Gold, in the Women's 48 kg, broke three Games records in the 'snatch' section, the 'clean and jerk' and the overall Games record.

➢ **Asian Games 2018 : Jakarta and Palembang, Indonesia**

• **India finished at 8th position at Asian Games 2018 with 15 Gold, 24 Silver and 30 Bronze Medals.**

• **Jinson Johnson became the first Indian in 56 years to win Men's 1500m event at the Asian Games, following Mohinder Singh's gold at the 1962 Games**

• **India's Arpinder Singh becomes the first Indian to win gold in men's triple jump in 48 years.**

➢ **List of Military Exercises(with India)**

Participating country	ARMY	NAVY	AIRFORCE
Russia	Indra		
USA, Japan		Malabar	
Japan	Dharma Guardian	Sahyog-Kaijin	
USA	Yudh Abhyas		Red Flag
China	Hand in Hand		
France	Shakti	Varuna	Garuda
UK	Ajeya Warrior	Konkan	Indradhanush
Nepal	Surya Karan		
Bangladesh	Sampriti		
Sri Lanka	Mitra Shakti	SLINEX	
Thailand	Maitree		
Indonesia	Garuda Shakti	CORPAT	
UAE			Desert Eagle

Oman		Naseem AlBahr	EasternBridge
Kazakhstan	Prabal Dostyk		
Mongolia	Nomadic Elephant		
Seychelles	LAMITIYE		
Singapore	Bold Kurukshetra	SIMBEX	
Australia		Ausindex	

Kyrgyzstan	Khanjar		
ASEAN +	Force 18		
Maldives	Ekuverin		
South Africa,Brazil		IBSAMAR	

➢ **Space Missions in News :**

MISSION	OBJECTIVE
HAYABUSA 2	Launched by JAXA,Japan, is enroute to **asteroid** 162173 Ryugu.
OSIRIS-REx	Launched by NASA, is en route to **asteroid** 101955 Bennu.
ARTEMIS P1/P2	Launched by NASA, are studying the effect of the solar wind on the **Moon**. Originally launched as Earth satellites, they were later repurposed and moved to lunar orbit.
Lunar Reconnaissance Orbiter	Launched by NASA, is engaged in **lunar** mapping intended to identify safe landing sites, locate potential resources on the **Moon**, characterize the radiation environment, and demonstrate new technology.
Akatsuki	The first **Japanese** Venusian probe. Also known as *Planet-C* and *Venus Climate Orbiter*, ***Akatsuki*** failed to enter Venusian orbit in December 2010. It continued to function and **entered Venus orbit in 2015**.
2001 Mars Odyssey,	A tribute to the classic novel and film, is one of six currently active human-made Mars satellites. It is continuing its extended mission to map the surface of Mars and also acts as a relay for the **Curiosity** and **Opportunity rovers**. Launched by NASA.
Mars Express	**ESA**; Mars orbiter designed to study the planet's atmosphere and geology, search for sub-surface water, and deploy the **Beagle lander**.
Mars Reconnaissance Orbiter	The second **NASA** satellite orbiting Mars. It is specifically designed to analyze the landforms, stratigraphy, minerals, and ice of the red planet.
Curiosity Rover	Part of NASA's Mars Science Lab (MSL),is searching for evidence of organic material on **Mars**, monitoring methane levels in the atmosphere, and engaging in exploration of the landing site at **Gale Crater**.
Mangalyaan	Is the first **Indian** interplanetary space probe. It was successfully inserted into orbit of Mars on 24 September 2014.
Mars Atmosphere and Volatile EvolutioN Mission (MAVEN)	is a space probe developed by NASA designed to study the Martian atmosphere while orbiting Mars. Mission goals include determining how the planet's atmosphere and water, presumed to have once been substantial, were lost over time.
Trace Gas Orbiter (ExoMars 2016)	Launched by ESA is carrying the lander Schiaparelli ,scheduled to use atmospheric braking for some months before commencing data collecting operations.
Dawn	NASA;successfully entered asteroid Vesta's orbit in July 2011. There

	it studied Vesta until September 2012, when it departed for dwarf planet Ceres
Juno	Launched by NASA to scientifically investigate Jupiter andis in polar orbit around Jupiter .
Cassini Orbiter	NASA,Began studying Saturn and its moons after passing Venus and Jupiter and deploying the Huygens Landing Probe to Titan. It is primarily investigating Saturn's rings, its magnetosphere and the geologic composition of its satellites; **ended in 2017**
New Horizons	**NASA;Is the first spacecraft to study Pluto up close**, and ultimately the Kuiper Belt. It is the fastest artificially-accelerated object and will be the fifth probe to leave the solar system.
Voyager 1	NASA;Is currently the farthest man-made object from Earth, as well as the **first object to leave the Solar System** and cross into interstellar space. **It was originally tasked with investigating Jupiter and Saturn, and the moons of these planets**.
Voyager 2	**Has left the solar system**. Its mission to study all four gas giants. Scientists are now using Voyager 2 to learn what the solar system is like beyond the heliosphere.
Rosetta	Operated by ESA, is orbiting the comet 67P/Churyumov–Gerasimenko. On November 12, 2014, a lander was successfully deployed for further investigation. Mission ended on 30 September 2016, when the probe landed onto the comet's surface.
Messenger	**NASA**;was **studying Mercury**. It is **only the second probe to do so and is the first to orbit the planet.** Technologically, it is far superior to its **1975 predecessor**, **Mariner 1**0. Having previously passed Earth once, Venus twice and Mercury three times, it entered orbit in March 2011. Mission ended on 30 April 2015, when the probe crashed onto the planet's surface.

➢ **Indexes and India's Rankings**

Index	**Published by**	**India's ranking (2017)**
Global Competitiveness index	World Economic Forum	58
Global Innovation index	Cornell University,INSEAD and WIPO	57
Global Peace index	Institute of Economics and Peace	136
Human Development index	United Nation Development Programme (UNDP)	130

World Happiness Index	United Nation Sustainable Development Solutions Network	133
Prosperity Index	Legatum Institute	94
Ease of Doing Business index	World Bank	77
Corruption Perception Index	Transparency International	81
Global Talent Competitiveness index	Global business school INSEAD in partnership with Adecco Group and Human capital Leadership Institute (HCLI) of Singapore.	81
Inclusive development Index	World Economic Forum	62
Climate Change Performance Index	German NGO and Climate Action Network Europe	14
Logistics Performance Index	World Bank's	35
World Press Freedom Index	Reporters Sans Frontières (RSF)	138
Sustainable Development Goals Index	Sustainable Development Solutions Network(SDSN)	116
International Intellectual Property Index	US Chamber of Commerce's GIPC	44
Global Hunger Index	International Food Policy Research Institute (IFPRI)	103
Global Human Capital Index	World Economic Forum	158
Travel and tourism Competitiveness Index	World Economic Forum	40