



VAJIRAM & RAVI

(Institute for Civil Services Examination)

OCTOBER 2020

the RECITALS

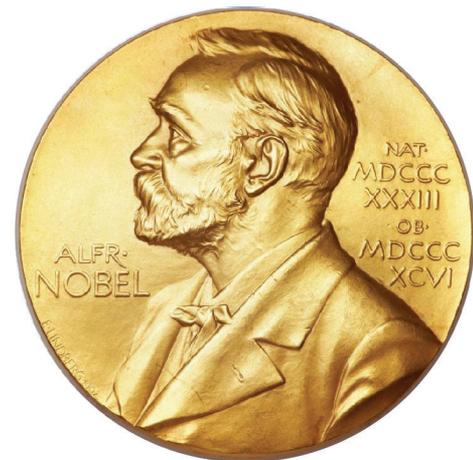
Explore Current Affairs Through Q&A



**Featured
Articles**



**Mains
Q & A**



**Prelims
Q & A**

**Bridging
Gaps**

Corporatisation Of Ordnance
Factory Board

Labour Laws

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(October 2020)

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From the Desk of the Director

Dear Students

The preparation of current affairs magazine is an evolutionary process as its nature and content keeps changing according to the demands of Civil Service Exam. As you are aware about the importance of current affairs for the prelims as well as mains exam, our aim is to follow an **integrated approach** covering all stages of examination from prelims to interview. Keeping these things in mind, we, at Vajiram and Ravi Institute, are always in the process of evolving our self so as to help aspirants counter the challenges put forward by UPSC.

In fulfillment of our objective and commitment towards the students, we have introduced some changes in our current affairs magazine. The CA Magazines, now with the name of “**The Recitals**”, will have four sections. These are:

1. **Feature Article:** As you are aware of the fact that civil service mains exam has become quite exhaustive and analytical, especially since 2013 after the change in syllabus, we have decided to focus on 2-3 topics every month that will provide an insight into the issue so as to help students understand the core of the issue. This will help in Essay writing as well as Mains Exam.
2. **Mains Q&A:** New students quite often struggle to find out that in what way the given topic is useful for them and in what form questions can be framed from the article. To help those students, we at Vajiram and Ravi have designed an innovative way to teach current affairs. Now, we will cover the current issues through questions and answers so as to make it more targeted towards exam. This will not just provide the information and analysis on current issues but will also help in learning the art of answer writing. Further the related information on the topics on which questions have been framed but that is outside the purview of answer will be given in the Box as ‘**Extra Mile**’.
3. **Prelims Q&A:** This section will contain prelims based MCQs that will test your diligence while reading the current issues. These MCQs will be of UPSC standard and will contain detailed explanation. Students are advised to attempt these MCQs honestly and read the Explanation carefully. The idea is to also provide students with a question bank of around 600 current affairs MCQs (50 Qs × 12 months = 600 Qs) just before their prelims examination, which will act as revision on issues spanning over the entire year.
4. **Bridging Gaps:** This section will contain miscellaneous topics which has not been covered through Q&A. That is why it is called Bridging Gaps, meaning the left-over topics.

So, the new magazine is a complete overhaul of what we have been doing for so long. We hope that the new beginning will be to the liking of students.

Thanks

Best Wishes

Corporatisation of Ordnance Factory Board

The corporatisation of the Ordnance Factory Board (OFB) was announced by the Finance Minister as part of Defence Reforms package. The corporatization will result in the conversion of the OFB into (**single or multiple units**) fully (100%) government-owned entities under the Companies Act, 2013 like other public sector undertakings.

However, government's move to corporatise the OFB has been strongly opposed by the federations of the workers from 41 ordnance factories and allied units across the country.

Steps Taken For Corporatisation

- In September 2020, the government constituted an Empowered Group of Ministers (EGoM) for Corporatization under the **chairmanship of the Defence Minister**.
- The **aim of this EGoM** is to oversee and guide the entire process, including transition support and redeployment plan of employees while safeguarding their wages and retirement benefits.
- **Terms of Reference** of the EGoM also include a decision on the conversion of OFB into a single Defence Public Sector Undertaking (DPSU) or as multiple DPSUs.

About OFB

- Dating back to 1775, the OFB is a very old organisation comprising of 41 ordnance factories, 13 ordnance research and development (R&D) centres, and nine ordnance institutes of learning spread all over the country at 24 different locations.
- Presently **functioning under the Department of Defence Production** of the Ministry of Defence, it is the key supplier of a wide variety of products to the armed forces, which include armaments, ammunition, equipment, clothing, and also troop comfort items.
- OFB is **headquartered at Kolkata**.

Why Government Wants To Corporatise OFB?

A. Various Committee Reports

- Various committees and their reports have observed that the OFB have regularly performed below its potential. It has also been found to be draining the Defence Budget with overpricing of material produced.
- The first-time corporatisation was suggested was in **2000 by Nair Committee**, this was followed by **Kelkar Committee recommendation in 2005** and **Raman Puri Committee** in 2015.

B. Performance Evaluation by the Comptroller and Auditor General (CAG)

CAG in its 2019 report highlighted the following facts:

- Expenses not directly attributed to creating a product or service is high and stands at a staggering 33% of the overall allotted budget for the year.

- The Ordnance factories achieved production targets for only 49% of the items.

C. Monopoly

OFB has a monopoly over several products required by the armed forces. This has resulted into **minimal innovation** and **technology development** and hardly any incentive to improve quality & cost-efficiency.

D. Limited Autonomy

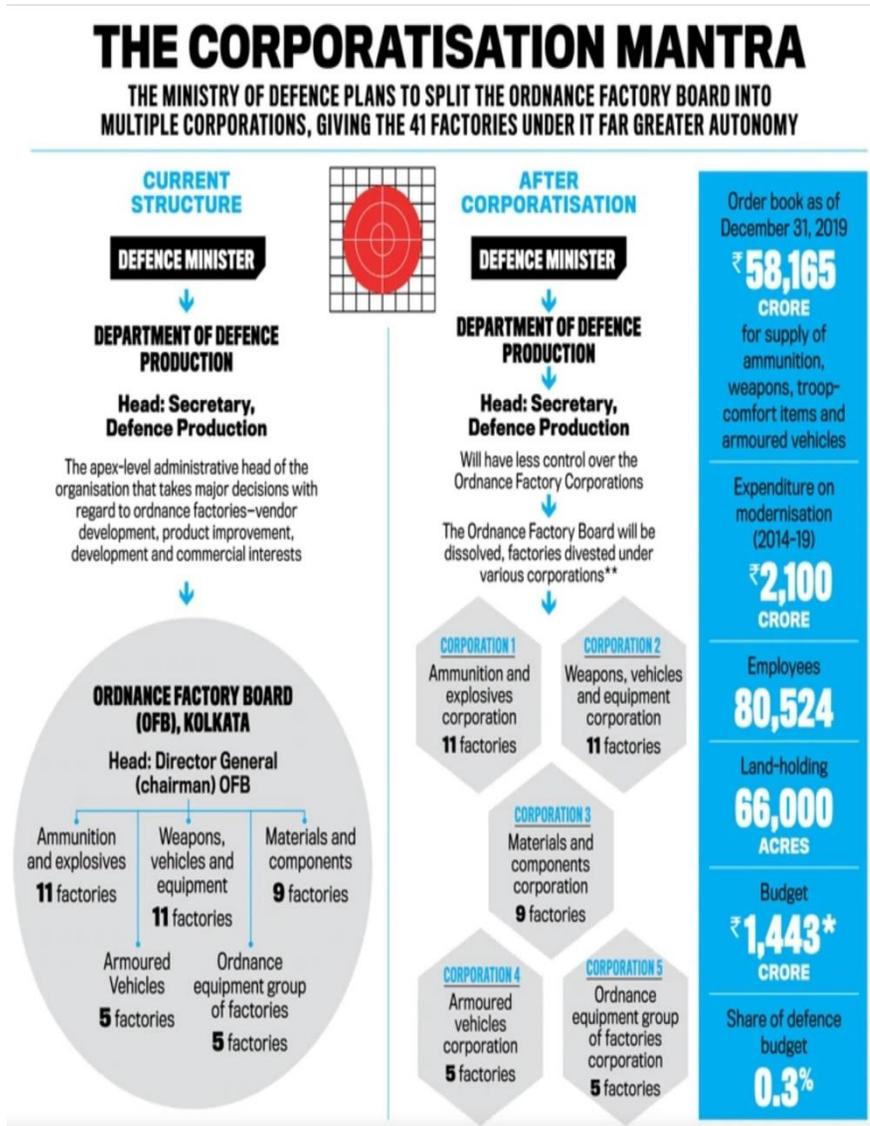
- The biggest problem with the OFB has been attributed to its limited autonomy as it an **attached office of MoD**.
- Post Corporatisation, OFB will be allowed to forge partnerships with the private the sector as per the MoD’s approved policy and will continue to receive orders from the country’s security forces.

E. Atmanirbhar Bharat

- India was the **second-largest arms importer** in the world over the past five years, which is not a very good tag to carry, if it has to meet the challenges of two front war.
- If the import figures from 1950 to 2017 are analysed, India has **imported \$119.89 billion worth of arms**; by far the largest globally.
- **Optimum use of idle or under-utilised capacities** of the factories, post corporatisation, which will help to generate **surplus production** over and above the requirement of armed forces, which can be exported to generate better revenues.

F. Global Image

- Unfortunately, due to the poor quality and lack of accountability, there have been frequent accidents which have resulted in injuries and death of soldiers.
- In fact, **certain countries have refused to accept** any Ordnance Factory manufactured ammunition and equipment which are offered against the Defence Lines of Credit.



Why This Move Is Facing Stiff Resistance?

1. Not Sustainable

- Breaking up the OFB into individual factories will not be a sustainable exercise due to the existing work division structures and **interdependence of units** for weapons and ammunition manufacturing.
- For an artillery gun, steel is made in Metal and Steel Factory Ishapore, Autofrettage (pre-stressing) of barrel in Kanpur, trails in Muradnagar, recuperator and buffer in Gun Carriage Factory (GCF), Jabalpur, some components in different factories and integration also in GCF Jabalpur.
- Therefore, making each factory an independent unit will kill the factories. Loss will be to national security.

2. Fear Among OFB Employees

One of the biggest concerns of the OFB employees is that 'Corporatisation' is the first step towards 'Privatisation' and is likely to result in layoffs and job cuts.

3. Commercial Viability Questionable

- Many analysts feel that the corporatisation of OFB will not be commercially viable.
- This is due to the fact that there are **no fixed demands** by the armed forces. Also, there are issues of long gaps between orders, uneconomical order quantity, and life cycle support required for 30-40 years after the introduction of equipment.

Few Suggestions to Be Followed Post-Corporatisation

- Permit the lateral entry of professionals with proficiency to head the OFs;
- Ensure in-house R&D; Form joint ventures (JV) with private industry;
- Weed out inefficient workers;
- Close down OFs which focus on manufacture of low technology items or those that are easily available in open market;
- Disinvest and monetise to raise capital for modernisation.

Conclusion

Considering the strategic environment and needs of the country at a time when Sino-Pakistan nexus poses a potential two front engagement scenario, the reforms in the defence sector are an inescapable necessity. One such area is **corporatisation of OFB**.

This move will transform ordnance factories into a **modernised, state of the art facility with flexible and better decision making** in its functioning. It will also make them more competitive and self-reliant in production of arms and ammunition and convert it to a profit earning organisation.

Labour Laws

Amending stringent and archaic labour laws has long been on the policy agenda. Yet, there hasn't been much movement on this issue because of the manner in which the debate has been framed. Labour reform is often reduced to giving firms the power to hire and fire workers, without having to seek the government's permission.

Labour falls under the Concurrent List of the Constitution. Therefore, both Parliament and state legislatures can make laws regulating labour. There are over 100 state and 40 central laws regulating various aspects of labour such as resolution of industrial disputes, working conditions, social security and wages. The Second National Commission on Labour (2002) (NCL) found existing legislation to be complex, with archaic provisions and inconsistent definitions. To improve ease of compliance and ensure uniformity in labour laws, the NCL recommended the consolidation of central labour laws into broader groups such as **(i) industrial relations, (ii) wages, (iii) social security, (iv) safety, and (v) welfare and working conditions.**

In 2019, the Ministry of Labour and Employment introduced four Bills on labour codes to consolidate 29 central laws. These Codes regulate: (i) Wages, (ii) Industrial Relations, (iii) Social Security, and (iv) Occupational Safety, Health and Working Conditions. The Parliament has now passed all four bills related to labour laws, which include, **Code on Wages, 2019; The Occupational Safety, Health And Working Conditions Code, 2020; Code on Social Security, 2020; and Industrial Relations Code, 2020.**

The Occupational Safety, Health And Working Conditions Code, 2020

As per the bill, the Central Government will declare standards on occupational safety and health for work places through a notification.

Duties of The Employer

- The employer shall be responsible to maintain health, safety and working conditions for the employees as may be prescribed by the Central Government.
- No charge should be levied on any employee, for maintenance of safety and health at the work place.
- Further, the employers have to provide free of cost annual health examination to employees.

Rights of Employee

If an employee feels that the work environment can lead to an injury or death, or pose any danger to health, he can inform the employer directly or through the Safety Committee.

Provisions For Employment Of Women

- Women shall be entitled to be employed in all establishments for all types of work under this Code.
- They may also be employed, with their consent, before 6 a.m. and beyond 7 p.m.

- If the government considers that the employment of women is dangerous for their health and safety, in an establishment, then the employer has to provide adequate safeguards for employing women in such operations.

Migrant Workers

- The bill has a separate section on inter-state migrant workers and states that rules shall apply to every establishment in which ten or more inter-state migrant workers are employed or were employed on any day of the preceding twelve months.
- The bill widens the coverage of migrant workers under labour laws, along with extending more social security benefits to the working class most affected during the COVID-19 pandemic.
- Under the present law, migrant workers were covered under labour laws only if they were hired through contractors. As a result of this, migrant workers who travelled on their own for work were not covered under the labour laws.
- The new bill defines inter-state migrant workers as the worker who has come on his own from one state and obtained employment in another state, earning up to Rs 18,000 a month. Thus, it will include workers who have been recruited directly by the employer or indirectly through a contractor.
- For the first time, the government has made a provision for framing schemes to provide option to migrant workers for availing benefits of public distribution system either in their home state or destination state.
- The migrant workers will also be able to avail benefits out of the cess funds meant for building and construction workers in the state where they are employed.
- It will be the duty of employers to extend certain benefits to migrant workers that are given to other workers in their establishment, including those related to the Employees' Provident Fund and Employees' State Insurance schemes.
- To ensure that the dataset of migrant workers are maintained by the States, the Central Government and the State Governments shall maintain the data base or record, for inter-State migrant workers, electronically on a portal.
- The migrant workers will also be allowed to register themselves on the portal, after giving a self-declaration and Aadhaar number.
- The employer will have to pay a journey allowance per year, which will include a lumpsum amount of fare for to and fro journey to the native place of the worker, from the place of his employment.



National and State Boards

- The Bill provides for the constitution of the **National Occupational Safety and Health Advisory Board** by the Central Government. The Board will advise the Central Government to frame standards, rules and regulations under the Code.

- It will also look into the issues of policy and programme relating to occupational safety and health referred to it, by the Central Government.
- Similarly, a **State Occupational Safety and Health Advisory Board** will be constituted by the various State governments.

Social Security Fund

The bill provides for the establishment of a social security fund by the government, for the welfare of the unorganised workers.

Punishment

- **Death** caused due to the non-compliance of the provisions of the Code, will be punished with an imprisonment for a term of up to two years, or with a fine not less than five lakh rupees, or with both.
- **Serious bodily injury** to any person within the establishment, shall be punishable with an imprisonment for a term of up to one year, or with a fine not less than two lakh rupees but not exceeding four lakh rupees, or with both.

The Code on Social Security Bill, 2020

The bill aims to extend social security benefits to all employees and workers either in the organised or unorganised or any other sectors.

Provisions On Gig Workers And Platforms Workers

- It empowers the Central Government to frame schemes for unorganised workers, gig workers and platform workers on matters relating to life & disability cover, health, old age protection; education etc.
- **Gig workers** refer to workers outside the “traditional employer-employee relationship”.
- **Platform workers** are those who are outside the “traditional employer-employee relationship” and access organisations through an online platform and provide services for payment.
- An **unorganised worker** is defined as one who works in the unorganised sector, and includes workers not covered by the Industrial Disputes Act, 1947. It also includes self-employed workers.
- So far, gig workers have not fallen under any legislation and are not entitled to social security schemes. Gig companies, such as Zomato, Swiggy, Ola, and others, consider such workers as independent contractors, and not employees, and hence are left out of any social security benefits.

Registration

- The Bill makes provisions for registration of all three categories of workers - unorganised workers, gig workers and platform workers. The workers will have to provide their Aadhaar number in order to be registered.
- A registered unorganised worker, gig worker or platform worker shall be eligible to avail the benefits of the scheme devised for them.

Social Security Fund

- The Central Government shall establish a Social Security Fund for social security and welfare of the unorganised workers, gig workers and platform workers.

- Further, state governments will also set up and administer separate social security funds for unorganised workers.

Role of Aggregators

- As per the bill, the schemes for gig workers and platform workers may be funded through a combination of contributions from the central government, state governments, and aggregators.
- For this purpose, the Bill specifies a list of aggregators with nine categories including ride sharing services, food and grocery delivery services, content and media services, and e-marketplaces.
- Aggregators or gig economy companies will have to contribute 1-2% of their annual turnover for social security of gig workers. The contribution should not be more than 5% of the amount paid to gig workers.

National Social Security Board (NSSB)

- The Bill provides for the establishment of a National Social Security Board for unorganised workers, by the central government. The term of the NSSB shall be three years.
- The Union Minister for Labour and Employment shall be the Chairperson of the NSSB.
- All members except the chairperson of the NSSB shall be people of eminence in the fields of labour welfare, management, finance, law and administration.
- Functions of NSSB
 - The NSSB shall recommend to the Central Government for formulating suitable schemes for different sections of unorganised workers, gig workers and platform workers.
 - It will advise the Central Government on matters arising out of the administration of Code on Social Security.

State Unorganised Workers' Board

Similar to the NSSB, every State Government shall constitute a State Board to be known as (name of the State) Unorganised Workers' Social Security Board.

Maternity Benefits

- The Bill contains provisions for maternity benefits such as prohibition from work during certain periods, provision of nursing breaks, crèche facility, claim for maternity benefits, etc.
- No woman will be required to work, in any establishment, for six weeks immediately following the day of her delivery, miscarriage or abortion.
- The maximum period for which any woman shall be entitled to maternity benefit shall be twenty-six weeks. Moreover, every establishment with fifty employees should have a creche facility.

Industrial Relations Code, 2020

The Code on Industrial Relations governs working conditions, retrenchment and layoffs, dispute resolution, and establishes industrial tribunals.

Increased Threshold For Standing Order

- The Industrial Relations Code has raised the threshold for requirement of a standing order to over 300 workers (from the current requirement of 100 workers). **Standing order** are rules of conduct for workers employed in industrial establishments.
- The Standing Committee on Labour, in its report submitted in April, 2020, had also suggested hiking the threshold to 300 workers, noting that some state governments like Rajasthan had already increased the threshold.

Change in Strike Provisions

- In the proposed Industrial Relations Code Bill, 2020, the government has introduced new conditions restricting the rights of workers to strike.
- No unit shall go on strike without giving notice 60 days before the strike, or within 14 days of giving such a notice, or before the expiry of any date given in the notice for the strike.
- Further, no person can go on a strike, during the pendency of proceedings before a Tribunal or a National Industrial Tribunal and sixty days after the conclusion of such proceedings.
- Similar restrictions have been put on the employer from announcing a lock-out.
- Further, the applicability of the required notice period and other conditions for a legal strike, have been expanded to cover all industrial establishments.
- The Standing Committee on Labour had recommended against the expansion of the required notice period for strike beyond the public utility services like water, electricity, natural gas, telephone and other essential services.

Worker Re-skilling Fund

- The IR Code provides for the setting up of a worker re-skilling fund for training of retrenched workers.
- The employer will contribute an amount equal to fifteen days wages last drawn by the worker immediately before the retrenchment. The fund will also receive contribution from other sources as prescribed by the government.

Mechanisms for Dispute Resolution

Grievance Redressal Committees

- Every industrial establishment employing twenty or more workers shall have one or more Grievance Redressal Committees for resolution of disputes arising out of individual grievances.
- The Grievance Redressal Committee shall consist of equal number of members representing the employer and the workers.

Conciliation Officers

- As per the Code, the government can appoint conciliation officers, who will have the duty of mediation and settlement of industrial disputes.
- A conciliation officer may be appointed for a specified area or for specified industries in a specified area or for one or more specified industries.

Industrial Tribunal

- The IR Code gives government the power to constitute one or more Industrial Tribunals for the adjudication of industrial disputes.
- Every Industrial Tribunal shall consist of **two members**, out of whom one shall be a Judicial Member and the other, an Administrative Member.

National Industrial Tribunal

- The Central Government may also constitute one or more National Industrial Tribunals (NIT) for the adjudication of industrial disputes.
- The NIT will deal with disputes that involve questions of national importance, or involves industrial establishments that are situated in more than one State.
- A National Industrial Tribunal shall consist of **two members** to be appointed by the Central Government out of whom one shall be a Judicial Member and the other, an Administrative Member.

Issues With The Bills

- To be fair, firms need to be provided flexibility in order to deal with the changes of business cycles. However, doing away with standing orders for firms with less than 300 workers, which will essentially cover most firms, will reduce the basic rights of workers in most organisations, affecting their bargaining power. It will also give flexibility to employers for easier removal of workers.
- The Social Security Bill continues to treat employees within the same establishment differently based on the amount of wages earned. For instance, provident fund, pension and medical insurance benefits are only mandatory to employees earning above a certain threshold (as may be notified by the government) in eligible establishments.
- The Bill provides for different schemes for all gig workers, platform workers and unorganised workers. However, there may be some overlap between their definitions. With such overlap across definitions, it is unclear how schemes specific to these categories of workers will apply.
- Power To Exempt
 - The Bill on Industrial Relations provides the government with the power to exempt any new industrial establishment or class of establishment from any or all of its provisions if it is in public interest.
 - The Bill on Occupational Safety enables the state government to exempt any new factory from its provision in the interest of creating more economic activity and employment.
 - Given that every new factory would lead to incremental employment, this gives wide discretion to the State government to exempt new factories from basic safety and welfare norms. The Factories Act permitted such exemption for a limited period of three months only during a public emergency.
- Violation of SC Judgement
 - The bill makes it compulsory for an employee or a worker (including an unorganised worker) to provide his Aadhaar number to receive social security benefits or to even avail services from a career centre.

- This may violate the Supreme Court's Puttaswamy-II judgement. In its judgement, the Court had ruled that the Aadhaar card may only be made compulsory for expenditure on a subsidy, benefit or service incurred from the Consolidated Fund of India.
- Since certain entitlements such as provident fund are funded by employers and employees and not by the Consolidated Fund of India, making Aadhaar mandatory for availing such entitlements may violate the judgement.

Conclusion

The new policies support an innovative nation. The big winners in all this are investors, employers, and workers as they collectively reinvent the worker-company relationship on the road to a digital future. The broad vision has been to give an impetus to economic activity without adversely affecting the interests of workers. Whether this is adequately reflected in the new provisions will be tested by the experience of administering the Codes. Overall, the success of the Codes would depend on how rules are framed and implemented on the ground and how organisations adapt to these changes.

MAINS Q&A

1. This year marks 15 years of the enactment of the Right to Information (RTI) law, which has empowered millions to assert their citizenship and show truth to power. In this light, discuss the key issues and constraints in implementing the RTI Act.

Answer

Without access to relevant information, people's ability to formulate opinions and express themselves meaningfully is curtailed. That is why, the right to information has been upheld by the Supreme Court as a **fundamental right flowing from Article 19 of the Constitution**, which guarantees every citizen the right to free speech and expression.

Since its enactment, the RTI law has been used by people to seek information to actively **participate in decision-making processes** and **hold governments accountable**. Every year nearly **six million applications** are filed under the RTI Act, making it the **most extensively used transparency legislation in the world**. A large proportion of these are filed by the poorest and the most marginalised who have understood the tremendous potential of the law to empower them to access their basic rights and entitlements, especially in the absence of effective grievance redress mechanisms to address service delivery failures

Key Issues And Constraints In Implementing The RTI Act

A. Issues Faced On The Demand Side

- **Low Public Awareness:** The Act lays down that the appropriate government may organize educational programmes to advance the understanding of the public, especially the disadvantaged communities regarding how to exercise their rights contemplated under the RTI Act. However, the Nodal Dept. has not undertaken any substantial steps to promote the RTI Act.
- **Constraints Faced In Filing Applications:** Act provides that reasonable assistance must be provided to the applicant while filing an application but there are several constraints in implementation of the following guideline:
 - a) There has been non-availability of user guides. Lack of user guide results in undue hardship to information seekers to gather knowledge about the process for submitting a RTI request.
 - b) The Act provides that an RTI application can be submitted in writing or through electronic means. However, inadequate efforts have been made to receive RTI applications through electronic means.
 - c) Inconvenient payment channels: While it is desirable for the State Government to collect fee from any mode but the majority Public Information Officers (PIOs) require the applicant to deposit the fee via cash or DD which causes inconvenience to the applicants.
- **Poor Quality of Information:** Due to lack of infrastructure and adequate processes to comply with the RTI Act, the quality of information provided is very low. The information provided is either incomplete or lacks the substantial data.
- **Constraints Faced In Inspection Of Records:** Under the Act, the information is to be provided in the form requested unless it would disproportionately divert the resources of the public authority. There is inadequate awareness of this provision of the RTI Act. This inadequateness can be linked to inadequate training of the PIOs and Assistant PIOs to utilize this provision effectively.

B. Issues Faced On The Supply Side

- **Inevitable delay in flow of information:** The Information Commission gets to know about the failure of the Public Authority in providing information within 30-45 days once the complaint is filed due to

inadequate measures and processes for an Information Commission to view adherence level to important provisions of the Act.

- **Lack of Behavioral Training:** RTI is an evolving act, resulting in new dimensions being added routinely. Hence, RTI refresher training or a central knowledge repository needs to be available to the PIOs.
- **Obsolete Record Management Guidelines:** Ineffective record management practices and collection of information from field offices leads to delay in processing of RTI applications. The records are required to be catalogued and indexed in a manner that the entire data is available through a centralized system on all over the country.
- **Lack of Monitoring And Review Mechanism:** There is no centralized database of RTI applicants. A centralized database of applicants with their information requests and responses from information providers will enable the PIOs to send an accurate and timely compilation.
- **Issues Faced At The Information Commissions:** Under the Act, the Information Commissions at the Central/State level are required to take steps to secure the compliance with the provisions of the Act. However, there have been inadequate processes and records available with the Information Commissions to monitor and review the working of the various Public Authorities and initiate steps to make them comply with the spirit of the Act.

Way forward

- The RTI applications must be **disposed off within the statutory time limit** provided under the Act with complete and comprehensive information. Unless and until the pendency is kept at the manageable level the objective of the Act would not be met.
 - **The Public Information Commissioners must be given adequate training** to be cooperative enough towards the Information seekers. External agency must be appointed to train the officers within and beyond the Act.
 - **Maintenance of information must be automated and efficient.** The State Government has to play a facilitative role by issuing rules/procedures to mandate the compliance of the Act.
 - **The role of Information Commissions must not be limited to hearing of appeals** but they must also be a watchdog over the public authorities.
 - **Dissemination of awareness** about the Right to Information in rural areas so that more rural people could practice this right.
2. **After the Gujarat High court started live streaming of proceedings of the Chief Justice Court, the Supreme Court has set up a committee to look into modalities of live streaming all court proceedings. In this context, discuss why live streaming of Court proceedings is a milestone for Indian judiciary?**

Answer

India stands alone amongst leading constitutional democracies in not maintaining audio or video recordings or even a transcript of court proceedings. Court hearings can be turning points in the life of a nation.

In 2018, a three-judge bench led by then Chief Justice of India had **first recommended broadcasting Supreme Court hearings live in the Swapnil Tripathi case**. However recently in a landmark initiative, the **Gujarat High Court became the first to live stream judicial proceedings** on YouTube channel. Though it's on "experimental basis", the move is being seen as a major measure towards transparency in judicial proceedings.

Benefits Of Live Court Proceeding

- **Right to know:** The SC has acknowledged the right of a litigant to know the fate of his case. The litigant is entitled to know how the lawyer is dealing with a case, assessing lawyer's performance and how a judge is reacting to his case even if he is not present in the court.
- **Spared from travel:** People from far-flung States such as Tamil Nadu and Kerala do not have to travel all the way to the national capital for a day's hearing in Supreme Court.
- **Transparency:** The live streaming will also make the justice delivery mechanism more accountable and transparent.
- **Useful during appeal and review:** Audio and video recordings of court proceedings can also be used at the time of review or appeal of a case.
- **End of adjournments:** The live streaming will also end the adjournments due to unpreparedness of lawyers.
- **Court decorum:** The live streaming of the court proceeding will also force the lawyers to maintain court decorum. With lawyer's faces being seen, they will be forced to act in a dignified way, without raising their voices or interrupting court proceedings.
- **Student learning:** It would be a great learning experience for students by knowing about the intricacies and process of law.
- **Problem of space resolved:** The space is a huge problem in the normally overcrowded courts. This would ease the crowds in the court.
- **International practice:** The British courts proceedings are live-streamed and have resulted in various benefits. Moreover, the proceedings before the International Court of Justice in the case concerning former Indian Navy Officer Kulbhushan Jadhav, who was sentenced to death by a Pakistani Military Court, was also live streamed.

Challenges

- **Impact on privacy and justice delivery:** There is a challenge of live streaming cases involving national security concerns, matrimonial disputes and rape cases. A public viewing of marital dispute and rape case proceedings would seriously affect justice and amount to a violation of the fundamental right to privacy.
- **Judiciary can't be equated with executive and legislature:** The role of the judiciary cannot be equated with the roles of the legislature and the executive and Judges are accountable only to the rule of law and to the Constitution as established by law.
- **Judge being subject to popular public opinion:** Unwanted public gaze caused by live streaming will tend to make judges subject to popular public opinion.
- **Cost intensive:** For expansion of video-conferencing, as well as for live streaming, dedicated high-speed fibre optic networks, or access to communication satellites would be required. In addition, the technological upgrading of all courts would be needed.
- **Cyber security threat:** Though the government has initiated remedial steps to address this problem and formulated the Cyber Security Strategy but it is more on the side of prescribed guidelines alone. The practical and actual implementation of the same is still missing.

Way forward

- **Only a specified category of cases** or cases of constitutional and national importance being argued for final hearing before the Constitution Bench be live streamed as a pilot project.
- **Prior consent of all the parties** to the concerned proceedings must be insisted upon
- **The concerned court would retain its power to revoke the permission at any stage** of the proceedings suo motu or on an application filed by any party to the proceeding or otherwise, in that regard, if the situation so warrants.

- **The discretion of the Court to grant or refuse to grant such permission** should be, inter alia, guided by the following considerations: (i) unanimous consent of the parties involved, (ii) even after the parties give unanimous consent the Court will consider the sensitivity of the subject matter before granting such permission (iii) any other reason considered necessary or appropriate in the larger interest of administration of justice, including as to whether such broadcast will affect the dignity of the court itself or interfere with/prejudice the rights of the parties to a fair trial.
 - **There must be a reasonable time-delay** (say ten minutes) between the live court proceedings and the broadcast, in order to ensure that any information which ought not to be shown, as directed by the Court, can be edited from being broadcast.
3. **The Global Hunger Index 2020 was recently released. Highlight the findings of the report along with the method used to calculate the index.**

Answer

The Global Hunger Index (GHI) 2020 was recently published by Concern Worldwide and Welthungerhilfe. GHI is designed to comprehensively measure and track hunger at the global, regional, and country levels.

GHI Calculation

- GHI scores are based on the values of four component indicators:
 - **Undernourishment** - Share of the population with insufficient caloric intake;
 - **Child wasting** - Share of children under age five who have low weight for their height, reflecting acute undernutrition;
 - **Child stunting** - Share of children under age five who have low height for their age, reflecting chronic undernutrition; and
 - **Child mortality** - Mortality rate of children under age five.
- Based on the values of the four indicators, the GHI determines hunger on a 100-point scale, where 0 is the best possible score (no hunger) and 100 is the worst.
- Further, each country's GHI score is classified by severity, from low to extremely alarming as follows: Low ≤ 9.9 ; Moderate 10.0-19.9; Serious 20.0-34.9; Alarming 35.0-49.9 and Extremely alarming ≥ 50.0

Global Highlights

- While the share of undernourished people - that is, people who consume too few calories—in the world has stagnated, the absolute number of undernourished people is on the rise.
- As of 2019, **8.9 percent of the world's population was undernourished**, unchanged from 2018. This amounted to nearly **690 million** undernourished people in 2019, up by 10 million people since 2018 and by nearly 60 million since 2014.
- Too many children are suffering from undernutrition, which increases their vulnerability when crisis occur. In 2019, **144 million children** worldwide suffered from stunting and **47 million children** suffered from wasting. In 2018, 5.3 million children died before the age of five, at a rate of 3.9 percent.
- The world is not on track to achieve the second Sustainable Development Goal - known as Zero Hunger - by 2030. At the current pace, approximately 37 countries will fail even to reach low hunger, by 2030.

Highlights From India

- India ranks **94 among 107 countries** in GHI 2020. India's rank was 102 out of 117 countries last year. With a score of 27.2, India has a level of hunger that is "serious".
- India ranks **lower than most of its neighbours** viz. Nepal (73), Pakistan (88), Bangladesh (75), Sri Lanka (64) and Myanmar (78) among others.

- According to the report, **14 %** of India's population was undernourished. The country recorded a **37.4 % stunting rate** among children under five and a **wasting rate of 17.3 %**.
- India's top-down approach, poor implementation processes, lack of effective monitoring and lack of convergence in approaches in tackling malnutrition are the reasons behind its poor nutrition indices.
- One positive in the report on India is the reduction in under-five mortality. The under-five mortality rate was at 3.7 per cent. This has been achieved largely due to decrease in deaths from birth asphyxia (oxygen deprivation), neonatal infections, pneumonia, and diarrhoea.

Way Ahead

- It is important to aim at addressing multiple forms of malnutrition holistically instead of single short-term measures.
- Hunger and undernutrition cannot and should not be fixed by merely providing calories. All stakeholders must pay attention to making balanced healthy diets which are climate-friendly, affordable and accessible to all.
- Further, investments should be made in improving maternal and child nutrition through pregnancy, infancy, and early childhood.

With collective effort, and the dedication of sufficient resources, the world can overcome these crises. If done properly, the response will build a stronger foundation, leaving the world less vulnerable and better prepared for future challenges.

Extra Mile

- The Global Hunger Index is an annual report, created in 2006. It was initially published by International Food Policy Research Institute (**IFPRI**) and **Welthungerhilfe**. In 2007, the NGO Concern Worldwide also became a co-publisher.
- In 2018, IFPRI stepped aside from its involvement in the project and the GHI became a joint project of Welthungerhilfe and Concern Worldwide.
- The scores for GHI 2020 reflect data from 2015-19. Data from the United Nations and other multilateral agencies are used for the calculation.

Rankings and Severity Of Hunger

- Seventeen nations, including China, Belarus, Ukraine, Turkey, Cuba and Kuwait, shared the top rank with GHI scores of less than five.
- No country that has been ranked, falls in the “extremely alarming” category on hunger. Three countries – Chad, Timor-Leste and Madagascar – have come under the “alarming” category.
- Africa South of the Sahara and South Asia have the highest hunger and undernutrition levels among world regions, with scores of 27.8 and 26.0, respectively—both considered serious.

4. **The World Bank recently released the Poverty and Shared Prosperity 2020 report. Highlight the findings of the report and the impact of Covid-19 on poverty in the world.**

Answer

The World Bank recently released its biennial **Poverty and Shared Prosperity 2020 report**. The report provides the latest and most accurate estimates on trends in global poverty and shared prosperity. Its report presents new estimates of COVID-19's impacts on global poverty. It also shows what it means for the world's poorest and how to put poverty reduction and development back on track.

Findings Of The Report

- Poverty reduction has suffered its worst setback in decades, after nearly a quarter century of steady global declines in extreme poverty.
- The report shows early evidence that the pandemic is deepening income inequality, threatening inclusive economic recovery and future growth.
- Global economic growth is predicted to fall by 5.2 percent in 2020, the largest drop in eight decades. The shock may have a prolonged impact on investment levels, remittances flows, the skills and health of the millions now unemployed.

Poverty Numbers

- The pandemic and global recession may cause over 1.4 per cent of the world's population to fall into extreme poverty. Thus, around 9.1% to 9.4% of the world will be affected by extreme poverty in 2020. If the pandemic had not occurred the poverty rate was expected to drop to 7.9% in 2020.
- It is estimated that an additional 88 million to 115 million people would fall into extreme poverty this year, with the total rising to as many as 150 million by 2021, depending on the severity of the economic contraction. Extreme poverty refers to an income below the international poverty line of \$1.90 per day, set by the World Bank.
- The report jointly analyzes three factors that are driving this increase in global poverty and that threaten to extend its effects in the future: **COVID-19, armed conflict, and climate change**.
- Climate change may drive about 100 million additional people into poverty by 2030, many of whom reside in countries affected by armed conflict, and where global extreme poverty is increasingly concentrated.

Distribution of Poverty

- Many of the newly poor individuals will be from countries that already have high poverty rates. The report estimates that, about 82 per cent of the total will be in middle-income countries.
- Sub-Saharan Africa, with 27-40 million new poor, and South Asia, with 49-57 million, will be badly hit.
- This uneven impact means the crisis is likely to increase inequality within countries in the longer term, which will make it more difficult for countries to generate inclusive growth in the future.
- People forced into poverty by COVID-19 may also differ from the current global poor in other ways.
- Within countries, a large share of the extreme poor are rural, whereas many of the new poor are likely to live in congested urban settings. Many of the new poor are likely to be engaged in informal services, construction, and manufacturing—the sectors in which economic activity is most affected by lockdowns.

Way Ahead

- Nations must look to reengage with a longer-term development agenda that includes promoting sustainable and inclusive growth, investing in human capital, and improving the quality of public administration and services.
- Safety net programs will need to adopt innovative targeting and delivery mechanisms, in particular to reach people in the informal sector in both rural and urban areas.
- Countries will also need to consider the changing profile of poverty and vulnerability as they invest in jobs. Policy options may include providing grants and wage subsidies to firms to minimize layoffs, supporting micro and small enterprises through measures such as tax exemptions and grants.

Thus, achieving the goal of ending extreme poverty by 2030 will require significant, swift, and sustained action to boost inclusive growth in countries where extreme poverty persists by allowing capital, labour, skills, and innovation to move into new businesses and sectors, to prepare for a different economy post-COVID-19.

Lack Of Data In India

- As the Indian government decided not to release the 2017-18 All India Household Consumer Expenditure Survey data from the 75th Round, there is an important gap in understanding poverty in South Asia.
- A number of results in the report are incomplete, or uncertain because of the lack of data from India which, as per the report, accounted for 139 million of the 689 million people living in poverty in 2017.

5. The International Energy Agency (IEA) recently released the World Energy Outlook (WEO) 2020. Highlight the findings of the report along with the measures for transition in the energy architecture of the world.

Answer

The annual World Energy Outlook is the International Energy Agency's flagship publication, widely recognised as the most authoritative source for global energy projections and analysis. It represents the leading source for medium to long-term energy market projections, extensive statistics, analysis and advice for both governments and the energy business. The 2020 edition focuses on the important period of the next 10 years, exploring different pathways out of the pandemic.

Highlights From The Report

The report outlines the impact of several different scenarios instead of giving just one scenario as follows:

- Under the **Stated Policies Scenario (STEPS)**, Covid-19 will be brought under control in 2021 and energy demand will rebound to its pre-crisis level in 2023.
- Under the **Delayed Recovery Scenario (DRS)**, it assumes that the global economy would return to its pre-crisis size only in 2023 and the energy demand will not rebound until 2025. As per the DRS, the pandemic would lead to a decade (2020-2030) with the lowest rate of energy demand growth since the 1930s.

Energy Demand Projections

- Energy demand was projected to grow by 12 per cent between 2019 and 2030 before the pandemic struck. However, the growth over this period will now decline to nine per cent under the STEPS, and to four per cent in the DRS.
- Due to the ongoing impacts of Covid-19, the IEA expects global energy demand to fall by 5% in 2020, with oil and coal consumption falling 8% and 7%, respectively.
- Some of the coronavirus-induced changes, including working from home and travel restrictions, are negative for oil demand. However, other effects such as an avoidance of public transportation and the continued popularity of SUVs, are supportive factors for oil demand.
- Thus, IEA expects oil demand to grow till 2030 and at this point (2030) it will reach its peak consumption.
- Natural gas demand is expected to decline by 3% this year — the largest decline since it became a major source of fuel in the 1930s. However, the IEA expects an increase in demand over the next decade.

Increase In Renewable Sources

- Under STEPS, renewable sources will meet around 80% of the growth in electricity demand over the next 10 years.

- By 2025, renewables will overtake coal as the primary means of producing electricity. If more aggressive policies are adopted, renewables will play an even bigger role in the next five years.
- Hydropower remains the largest renewable source, but solar will be the main source of growth in the next decade, followed by onshore and offshore wind.
- The combined share of solar and wind in global generation will rise to almost 30% in 2030 from 8% in 2019, with the solar capacity growing by an average 12% a year.
- Improving technology and support mechanisms have cut financing costs for major solar PV projects, which has helped in bringing down overall output costs. Solar PV is now cheaper than new coal- or gas-fired power plants in most countries.
- Despite the increase in solar and wind power, carbon emissions are projected to pick up in 2021 after a 2.4 gigatonne (Gt) drop in 2020, and to exceed 2019 levels in 2027 before growing to 36 Gt in 2030.

Highlights From India

- India has started showing signs of recovery in energy demand, which is an indicator of economic activity. With demand for energy in advanced economies on a declining trend, most of the increase will come from emerging market and developing economies, led by India, over the next 10 years.
- A slower pace of growth in global oil demand with a growing oil production outlook will help the Indian government through lower oil import and fuel subsidy bills. It will also benefit the consumers with cheaper fuels.
- However, low oil and gas prices will hurt domestic producers and their ability to spend on future projects.
- The large drop in investments globally will increase the risk of future market volatility, which will be a negative for India, as the country depends on imports for 83% of its oil needs.

Way Ahead

- While, the clean energy transition continues to show improvement, faster and bolder structural changes are needed if the world plans to reach net-zero carbon emissions.
- A significant part of those efforts would have to focus on reducing emissions from existing energy infrastructure – such as coal plants, steel mills and cement factories.
- Maintaining a strong pace of emissions reductions post-2030 requires a strong focus on energy and material efficiency, electrification, and a strong role for low-carbon liquids and gases.
- Moreover, the finance sector will have to facilitate a significant increase in clean technologies, aid the transition of fossil fuel companies and bring low-cost capital to the countries and communities that need it most.

Governments have the capacity, however, they must realise their responsibility and take decisive actions to accelerate clean energy transitions and put the world on a path to reaching the climate goals, including net-zero emissions.

Extra Mile

- The other two scenarios, apart from STEPS and DRS are the **Sustainable Development Scenario (SDS)** and **Net Zero Emissions by 2050**, that outline the necessary steps to reach stated climate goals.
- In the SDS, net-zero emissions will be achieved by 2070, while in NZE 2050, the goal of net emissions will be achieved by 2050, by implementing aggressive policies.
- The NZE 2050 includes the first detailed IEA modelling of what would be needed in the next ten years to put global carbon dioxide emissions on track for a net zero emissions scenario by 2050.

International Energy Agency

- The International Energy Agency is a Paris-based autonomous intergovernmental organization established in the framework of the Organisation for Economic Co-operation and Development (OECD) in 1974 in the wake of the 1973 oil crisis.
- The IEA was initially dedicated to responding to physical disruptions in the supply of oil, as well as serving as an information source on statistics about the international oil market and other energy sectors.
- It acts as a policy adviser to its member states, but also works with non-member countries, especially China, India, and Russia.
- The Agency's mandate has broadened to focus on the **3Es of effectual energy policy**: energy security, economic development, and environmental protection.
- The IEA has a broad role in promoting alternate energy sources (including renewable energy), rational energy policies, and multinational energy technology co-operation.

6. The International Monetary Fund recently released its World Economic Outlook 2020 report. Highlight the findings of the report along with the recommended measures for countries across the world to move out of the pandemic.

Answer

The International Monetary Fund recently released its World Economic Outlook October 2020 report, titled A Long and Difficult Ascent. It presents an analysis of global economic developments during the near and medium term.

Global Highlights

- As per the report, global growth would contract by 4.4 per cent this year. It expects the global recovery at an uneven pace, with the advanced world now expected to contract less.
- Emerging market and developing economies, excluding China, are projected to face a greater loss of output over 2020-21, compared to advanced economies.
- For instance, business surveys show that firms in the United States, Euro area, China, and Brazil expanded output successively in July and August compared to the previous month, whereas the scenario was opposite for India, Japan, and Korea.
- China is the only country, among the major economies, to show a positive growth rate of 1.9 per cent in 2020.

Impact On Poverty

- The cumulative loss in output is projected to grow from 11 trillion over 2020-21 to 28 trillion over 2020-25. Thus, the pandemic will reverse the progress made since the 1990s in reducing global poverty and will increase inequality.
- This will cause a severe setback to projected improvements in living-standards across all groups of countries. Close to 90 million people could fall below the \$ 1.90/day extreme poverty threshold.

Highlights From India

- The Indian economy, severely hit by the coronavirus pandemic, is projected to contract by a massive 10.3 per cent this year. India is expected to rebound in 2021 with 8.8 percent growth – an upgrade of 2.8 percentage points relative to the June update.

- The projections are similar to the projections of other global economic institutions, that expected India's economy to contract in double digits during FY21. The World Bank recently projected that the Indian economy would contract by 9.6 per cent.
- The current account balance is projected to grow by 0.3% this year and -0.9% (i.e., a contraction) next year. The report attributed this to lower oil prices and weak domestic demand.
- India's per capita GDP is expected to fall to \$1,877 in 2020 from \$2100 in 2019 a decline of 10.3 per cent. However, per capita GDP of Bangladesh is projected to rise from \$1820 in 2019 to \$1890 in 2020, a rise of 4 per cent.
- The last time Bangladesh's per capita GDP was more than India's per capita GDP was in the year 1991. At that point, India was undergoing a severe crisis and its GDP grew just above 1%.
- Moreover, India is among those likely to suffer the greatest damage from global warming, reflecting its initial high temperatures.

Way Ahead

- The impact of this pandemic is likely to be long, uneven, and highly uncertain. Thus, a lot that needs to be done to ensure a sustained recovery.
- There is a need for greater international collaboration on tests, treatments and vaccines. If these are made available faster than IMF's expectations, it could mean an increase in global cumulative income by \$ 9 trillion by the end of 2025.
- Governments should support incomes, by well targeted cash transfers, wage subsidies and unemployment insurance.
- Further, policies should aid workers' transition to growing sectors (e.g. e-commerce) and away from sectors like travel which are likely to shrink.
- For firms that are viable but vulnerable, recommendations include postponement of taxes and debts, along with funding support.
- The international community must support emerging market and developing economies through institutional grants, concession financing and debt relief.

Measures to prevent the increase of financial risks over the medium should be pursued and central bank independence should be safeguarded at all costs. Policies to support the economy in the near term should therefore be designed to guide economies to paths of stronger, equitable, and resilient growth.

Extra Mile

Projections for Climate Change

- While advanced economies had historically contributed the major share of emissions, China and India, as fast-growing emerging economies, were significant emitters and are expected to account for growing shares of carbon emissions.
- The report pointed that, advanced economies cannot successfully mitigate climate change by themselves, as they accounted for a declining share of global emissions.
- In contrast, the five largest countries/economic union — the United States, China, the European Union, Japan, and India — acting jointly could make a huge impact in global emissions.



Region	2020	2021
India*	-10.3	8.8
Brazil	-5.8	2.8
Russia	-4.1	2.8
China	1.9	8.2
South Africa	-8	3
World	-4.4	5.2

Sliding further
 India's economy is projected to contract by 10.3% in 2020, the slowest among BRICS countries. The table lists projections by the IMF for 2020 and 2021

*India's figures are for fiscal years. All figures in %

Future Trends

- India's per capita GDP is expected to overtake Bangladesh's per capita GDP in 2021. For 2021, IMF's projections for India and Bangladesh are \$2030 and \$1990, respectively.
- However, the trend is not expected to sustain for long, as Bangladesh is projected to match India's per capita GDP in 2024 at \$2540. Later in 2025, Bangladesh will again overtake India's per capita GDP at \$2756 against \$2730 for India.
- If IMF's forecast come true, India's GDP will only be ahead of Pakistan and Nepal in the region. It means others in South Asia — Bhutan, Sri Lanka, Maldives and Bangladesh — will be ahead of India.

International Monetary Fund (IMF)

- The IMF is an international organization, headquartered in Washington, D.C., consisting of 189 countries. Formed in 1944 at the Bretton Woods Conference, it came into formal existence in 1945 with 29 member countries.
- The IMF's primary purpose is to ensure the stability of the international monetary system—the system of exchange rates and international payments that enables countries and their citizens to transact with each other.
- The Fund's mandate was updated in 2012 to include all macroeconomic and financial sector issues that have an impact on global stability.
- It thus aims to encourage global monetary cooperation, secure financial stability, facilitate international trade, promote high employment and sustainable economic growth, and reduce poverty around the world.

7. Why Central Asia is significant for India? Despite close historical & cultural contacts between India and Central Asia, the relationship has not flourished to the desired extent. Comment.

Answer

Relations between India and Central Asia are ancient and civilisational. India has been connected closely with Central Asia through the Silk Route. Today, the importance of Central Asia for India is not merely civilisational and historical; it goes much beyond this.

Significance of Central Asia for India

- **Energy Security** - Central Asia contains vast hydrocarbon fields and Uranium reserve. With India projected to become ever more reliant on imported energy cultivating alternative sources of energy has become a vital concern.
- **Geostrategic Importance** –Being placed in the middle of the Eurasian Continent, Central Asia is one of the most convenient routes of transit.
- **Commercial Interest** - Both India and Central Asia have economic complementarity in terms of resources, manpower and markets.
- **Geopolitical Interest** – Today Europe, US, China, and Iran are trying to increase their influence in this region. All this is likely to bring in high-stakes power politics in Central Asia.
- **Internal Security** - India sees this region as a source of religious extremism and is concerned to check the rise of radical Islamist groups which may present a terrorist threat. These security concerns are compounded by the proliferation of drug-trafficking in Central Asia.

Despite all this, relationship between these two regions has not progressed to the desired level due to various challenges. These are:

- **Geographical connectivity** is the biggest challenge faced by India in this region.
- Recently, **Russia is seeking convergence with China** in the Central Asian region. It is affecting India's interest in the region.
- India **lacks in-depth understanding** of Central Asia's political, linguistic and above all intricate socio-tribal structural underpinnings.
- India's **political and economic goals** are still unclear to Central Asia.
- Central Asian **economies are weak**, their societies are **infected with corruption**, and they perilously suffer from **social polarization**, poverty and lack the rule of law.
- Central Asian political systems are **not institution-based**, they are **not accountable** to their peoples and they are unstable.
- The presence of Russia and China, and their **mutual dislike for the US**, only increases tensions in Central Asia.

Conclusion

- Central Asia can be the next Middle East for India in terms of employment and to fuel India's growth and serve domestic needs, there is an imperative for expanding cooperation with the region.
- For this, government has initiated '**Connect Central Asia**' policy. In January 2019, the **First India-Central Asia Dialogue** at the level of Foreign Ministers was held in Samarkand, Uzbekistan. This will help in institutionalization of dialogue process.
- The **membership to SCO** is further providing India an opportunity to gain deeper access to Central Asia.

Extra Mile

The **2nd meeting of the India-Central Asia Dialogue** was held in the digital video-conference format, under the chairmanship of the External Affairs Minister of India. **1st meeting** of the Dialogue was held in **January 2019 in Samarkand** (Uzbekistan).

Key Highlights

- The leaders emphasized the need to continue close cooperation between the **Sanitary and Epidemiological Services of India** and the Central Asian countries in the fight against Covid-19 pandemic.
- The Ministers of Kazakhstan, Kyrgyz Republic, Tajikistan and Uzbekistan acknowledged **India's humanitarian medical assistance to their countries** in the fight against Covid-19 pandemic.
- During the dialogue, **India extended a \$1-billion line of credit** to Central Asian countries for projects in connectivity, energy, IT and health care.
- India has also offered to provide **grant assistance for implementation of High Impact Community Development Projects** for furthering socio-economic development in the countries of the region.
- The Ministers welcomed the launch of the **India-Central Asia Business Council (ICABC)** in New Delhi in February 2020. It will help in expansion of trade and economic cooperation.
- India's efforts to modernize the infrastructure of the Chabahar port in Iran was also appreciated.
- The Ministers welcomed the **participation of Afghanistan in the India- Central Asia Dialogue**. They called for the settlement of the Afghan conflict on the principle of **Afghan-led, Afghan-owned and Afghan-controlled peace process**.

8. South China Sea has assumed great geopolitical significance in the present context. Comment.

Answer

- The **South China Sea** is a marginal sea that is part of the Pacific Ocean, encompassing an area from the Karimata and Malacca Straits to the Strait of Taiwan.
- Recently, Philippine government has decided to resume oil exploration in the disputed South China Sea. In 2016, Permanent Court of Arbitration (PCA) awarded a verdict refuting Chinese claim over South China Sea. In this context, the significance of this sea has increased a lot.

Philippines to Resume Oil Exploration in South China Sea

- Philippine government has decided to resume oil exploration in the disputed South China Sea.
- The government has approved the **lifting of a six-year moratorium** on oil exploration in the **Palawan Island**. The moratorium was imposed in 2014 in the light of tensions between the Philippines and China due to overlapping territorial claims.

Geopolitical Significance

- **For China**
 - China declared its right to the islands of this region in an official address to the UN Secretary General back in May 2009.
 - With its growing economy and increasing energy and raw material exports shipped through the Malacca Strait, Beijing needs to create strongholds in the sea to insure against possible risks.
- **For ASEAN**
 - Many ASEAN countries like Vietnam, Philippines, Brunei etc. claim their sovereign rights over this region and hence are parties to the dispute.
 - After the verdict of PCA, government of these countries would get more leverage in their own disputes with Beijing over South China Sea.
- **For USA**
 - USA is aggressively pursuing its rebalancing strategy and hence it is wary of Chinese domination in this region.
 - After the verdict, there are chances of more confrontation between USA and China in this region.
- **For India**
 - India's presence in Pacific is increasing making it an important player in the Indo-Pacific region. For this freedom of navigation through South China Sea is very important.
 - India is also pursuing its economic interest in this region. It has collaborated with Vietnam to explore the petroleum resources in South China Sea which has been opposed by China
 - Also, large volume of Indian trade happens through the Strait of Malacca.
- **Resource availability and trade**
 - The region has huge amount of oil and natural gas reserve.
 - This body of water holds one third of the entire world's marine biodiversity, thereby making it a very important area for the ecosystem.
 - It provides access to the one-third of the world's maritime shipping through it. As per reports, the region encompasses over **US \$3 trillion trade every year**.
- **For Multilateralism**
 - South China Sea region has become a litmus test for multilateralism especially after the verdict of PCA which China is not willing to accept. It has potential to affect the credibility of PCA.
 - World community fears that aggressive posture of China may lead to defying of United Nation Convention on Law Of Sea (UNCLOS) which ensures freedom of navigation in high seas.

Conclusion

Involvement of multiple actors reflects the geopolitical significance of this region. Also, events in the South China Sea will have ramifications for the wider Asian Commons. Principled stand to promote international maritime laws will help in diffusing the tensions.

9. The G20 is slowly but steadily becoming irrelevant. Critically comment.

Answer

- Established in 1999, G20 was elevated to a premier global forum for international economic cooperation in 2008 **to effectively respond to the global financial crisis of 2008**.
- However, in recent years, the G20 has struggled to maintain its influence as some members shift from multilateralism to more nationalistic policies. The Osaka summit of 2019 as well as the Buenos Aires summit of 2018 saw the increasing trend of bilateral meetings on the side-lines of G20 summit.
- As a result, many analysts are criticizing the G20. They contend that the irrelevance of G20 has been slow, steady and certain, one Summit after another, one city at a time.

G20 Is Becoming Irrelevant

- It failed to revive the **sluggish global growth and falling trade** between global economies. It failed to **find a solution to tariff war** between US and China.
- In recent times, it has been observed that the **rivalry between the United States and China hijacks** the agenda of this multilateral gathering.
- The summit often talks of wanting to open up new horizons for development **without giving any indication on how this would be done**. Buenos Aires declaration of 2018 or Osaka declaration of 2019 support this fact.
- So far, it has failed to check the **rising tendency of protectionism and xenophobia** which are evident from BREXIT, termination of GSP by USA and from statements of US President Trump.
- **Reducing the reliance on credit rating agencies** by finding alternate methods was one of the prime objectives of G20. It has not been able to devise the alternate mechanism.
- **Reform in IMF, WTO** is the need of the hour. However, it has failed to such financial reforms.
- For the participating leaders, the **lack of an overarching focus**, has meant the G20 was used mainly to burnish bilateral ties. This was seen at the recently concluded Osaka Summit.

G20 Is Still Relevant

- **Significant Weight** - G20 members **represent around 85 per cent of global gross domestic product, over 75 per cent of global trade, and two-thirds of the world's population**.
- **Promotes Multilateralism** – the G20 is better positioned than older groups to navigate the divide between developed and emerging economies, and the practice of rotating the chair gives them all a chance to shape the global agenda.
- **A number of overarching themes** –Summits usually have a number of overarching themes. In Buenos Aires last year, these were **“the future of work, infrastructure for development and a sustainable food future”**.
- It has gradually broadened its global economy focus to areas like counterterrorism, Climate change, North Korea and Iran.
- The G20 was also credited with **helping avert a shift to protectionism post-global financial crisis in 2008, tripling the International Monetary Fund's budget** and giving development banks more remit.

- **G20 during current pandemic** – The COVID-19 pandemic has starkly highlighted the inadequacy of current governance arrangements. However, the G20 is uniquely placed to bridge the global governance gap. At a video conference in March 2020, G20 leaders **agreed to inject \$5 trillion into the global economy** to counter the economic and social impact of the coronavirus crisis.

Conclusion

- There is need to persuade leaders that the task begun in November 2008 is not over. A slowdown is around the corner, a recession in some countries is a few quarters away.
- The **tensions and so-called new cold war** make organisations like the G20 even more important as a **venue for direct contact among leaders**.

G-20 Anti-Corruption Working Group Meeting

- The **1st ever** Ministerial Meeting of G-20 Anti-Corruption Working Group was held recently.
- It was **hosted by Saudi Arabia**, who is the current Chair of the organisation.

About Anti-Corruption Working Group of G-20

- It was **established in June 2010** at the G20 summit held at Toronto.
- Its primary goal is to prepare comprehensive recommendations for consideration by leaders on how the G20 could continue to make practical and valuable contributions to international efforts to combat corruption.
- The group works with the OECD, United Nations Office on Drugs and Crime, World Bank, Financial Action Task Force (FATF) and IMF.
- The G-20 countries had **agreed on the Anti-Corruption plan for 2019-2021** at Buenos Aires in 2018.

About G20

- Established in 1999, G20 was elevated from a forum of Finance Ministers and Central Bank Governors to that of Heads of State/Government in 2008 **to effectively respond to the global financial crisis of 2008**.
- Since then it has emerged as the premier global forum for international economic cooperation.

10. The battle for gender equality will remain incomplete unless women are given a combat role in Indian armed forces. Critically Discuss.

Answer

The Supreme Court has extended till December 31 the deadline for implementation of its judgement on grant of **permanent commission to women officers in Indian Navy**. SC, in its judgment on March 31, had cleared permanent commission for women in the Navy and **asked the Centre to complete the modalities within three months**.

In the context of Indian armed forces, many steps have been taken, in the recent past, to correct the historical gender injustice. These include- granting Permanent Commission to women officers, inducting women as a fighter pilot etc. These steps have started a debate around the women in combat role in the armed forces.

Arguments Opposing The Combat Role

- **Physical Ability** - The standards of physical fitness have been set to suit men, and women attempting to reach them will over-stretch themselves and will suffer high injury rates.

- **Additional Burden** - integration of women through regulatory and disciplinary costs associated may not make it a worthwhile move.
- **Military readiness** - Pregnancy can affect the deployability of a unit when the unit has a disproportionate number of women or is understaffed.
- **Abuse by Enemy** - Both male and female prisoners are at risk of torture and rape, but misogynistic societies may be more willing to abuse woman prisoners.
- **Possible insubordination** – In India, most of the jawans are from rural origin, may not be ready to accept a woman as their officer.

Arguments In Support

- **Ability vs Gender** - As long as an applicant is qualified for a position, one's gender is arbitrary.
- **Military Readiness** - Women, who choose to become active combat soldiers, are unlikely to shirk their duty by becoming pregnant after a call-up.
- **Changing Traditions** - Cultures change over time and the masculine subculture can evolve too. Many previously masculine professions have been successfully opened to women over the past century.
- **Wider base** - Having a wider personnel base allows militaries to have the best and most diplomatic soldiers working to end conflict quickly.

Conclusion

- The battle for gender equality is about confronting the battles of the mind and Indian history is replete with examples where women have been denied their just entitlements under law and the right to fair and equal treatment in the workplace.
- Hence, to overcome the histories of discrimination, it would be a **logical step for India to promote women in combat role**.
- **Many countries** including Germany, Australia, Canada, the US, Britain, Denmark, Finland, France, Norway, Sweden and Israel have allowed women in combat roles.
- India can certainly gain from their experience although there is a variance in the cultural milieu. There is plethora of challenges that need to be tackled through a trial-and-error method to evolve a planned induction.

Women In Military

A. Indian Air Force

- Women **already serve in combat roles in the air force**. Indian Air Force, in 2019, qualified its first women fighter pilots. Not only that, in September 2020, flight lieutenant **Shivangi Singh** was inducted as the **first woman pilot to fly Rafale**.

B. Indian Navy

- In Navy, women naval officers **already perform combat tasks**. They are engaged in activities such as firing torpedoes and missiles at enemy warships while serving as observers and weapons systems officers on board maritime aircraft like the P-8I Poseidon.
- Women officers also serve on board naval warships in combat, albeit discharging non-combat roles.
- In September 2020, two women officers (**Kumudini Tyagi** and **Riti Singh**) have been selected to join as "Observers" (Airborne Tacticians) in the helicopter stream of the Indian Navy. The women officers are the **first set of women airborne combatants** who would be operating from warships.

C. Indian Army

- Initially there was a **strong institutional resistance** from Army in allowing women into **combat roles**.

- After the Judgement of SC, the government, in July 2020, issued the formal sanction letter for **grant of permanent commission to women officers** in the Indian Army.
- At present, there are total of 1,653 women officers which is a miniscule 4 % of the total strength of commissioned officers in the Army.

11. What are the features of Assisted Reproductive Technology (Regulation) Bill, 2020? Also, highlight the concerns associated with it.

Answer

The Assisted Reproductive Technology (Regulation) Bill, 2020, recently introduced in Lok Sabha, seeks to **regulate ART banks and clinics, allow safe and ethical practice of ARTs** and protect women and children from exploitation. The Bill was introduced to **supplement the Surrogacy (Regulation) Bill, 2019 (SRB)**.

Features

- **Definition:** The Bill defines ART to **include all techniques that seek to obtain a pregnancy** by handling the sperm or the oocyte (immature egg cell) outside the human body and transferring the gamete or the embryo into the reproductive system of a woman.
- Examples of ART services include gamete (sperm or oocyte) donation, in-vitro-fertilisation (fertilising an egg in the lab), and gestational surrogacy (the child is not biologically related to surrogate mother).
- ART services will be provided through:
 - **ART clinics**, which offer ART related treatments and procedures,
 - **ART banks**, which store and supply gametes. Screening of gamete donors, collection and storage of semen, and provision of oocyte donor can only be done by a registered ART bank.
- **Regulation of ART Clinics And Banks:** The Bill provides that every ART clinic and the bank must be registered under **National Registry of Banks and Clinics of India**. The registration will be valid for five years and can be renewed for a further five years.
- **Conditions for offering ART services:** ART procedures can only be carried out with the **written informed consent of both the party** seeking ART services as well as the donor. A clinic is **prohibited from offering to provide a child of pre-determined sex**. The Bill also requires checking for genetic diseases before the embryo implantation.
- **Rights of a child born through ART:** A child born through ART will be deemed to be a **biological child of the commissioning couple** and will be entitled to the rights and privileges available to a natural child of the commissioning couple. A **donor will not have any parental rights over the child**.
- **National and State Boards:** The Bill provides that the **National and State Boards for Surrogacy** constituted under the Surrogacy (Regulation) Bill, 2019 will act as the National and State Board respectively for the regulation of ART services.

Concerns Associated With The Bill

- **Overlap Between ART Bill and SRB:** Core ART processes are left undefined; several of these are defined in the SRB but not the Bill. Definitions of commissioning “couple”, “infertility”, “ART clinics” and “banks” need to be synchronised between the Bills. A single woman cannot commission surrogacy but can access ART.
 - Also, the same offending behaviours under both Bills are punished differently and in many cases, punishments under the SRB are greater.

- Offences under the Bill are bailable but not under the SRB. Records have to be maintained for 10 years under the Bill but for 25 years under the SRB.
- **Multiple Bodies For Registration:** The Bill designates surrogacy boards under the SRB to function as advisory bodies for ART, which is desirable. However, both Bills set up multiple bodies for registration which will result in duplication or worse, lack of regulation.
- **Limited Access to ART:** The Bill allows for a married heterosexual couple and a woman above the age of marriage to use ARTs. It excludes single men, cohabiting heterosexual couples and LGBTQ/ individuals and couples from accessing ARTs. This violates Article 14 of the Constitution and the right to privacy jurisprudence.
- **Lesser Protection to Donors:** The ART Bill does little to protect the egg donor. Harvesting of eggs is an invasive process which, if performed incorrectly, can result in death.
 - The Bill requires an egg donor's written consent but does not provide for her counselling or the ability to withdraw her consent before or during the procedure (unlike for commissioning parties).
 - She receives no compensation or reimbursement of expenses for loss of salary, time and effort. Failing to pay for bodily services constitutes unfree labour, which is prohibited by **Article 23** of the Constitution.
 - The commissioning parties only need to obtain an insurance policy in her name for medical complications or death; no amount or duration is specified.
- **Risk of Promoting Eugenics:** Eugenics is the practice or advocacy of improving the human species by selectively mating people with specific desirable hereditary traits.
 - The Bill requires pre-implantation genetic testing and where the embryo suffers from “pre-existing, heritable, life-threatening or genetic diseases”, it can be donated for research with the commissioning parties' permission.
 - These disorders need specification, thus the Bill risks promoting an impermissible programme of eugenics.
- **No Ethics Committee:** The Bill requires clinics and banks to maintain a grievance cell but these will be one-sided. **Clinics must instead have ethics committees.** Mandated counselling services should also be independent of the clinic.
- **Severe Punishment:** The SRB and the Bill impose high sentences (8-12 years) and hefty fines. The poor enforcement of the PCPNDT Act, 1994, demonstrates that enhanced punishments do not secure compliance.

The Bill raises several constitutional, medico-legal, ethical and regulatory concerns, affecting millions and must be thoroughly reviewed before passage.

PRELIMS MCQS

1. Data Governance Quality Index (DGQI) exercise, recently in news, was conducted by which among the following?

- a) NITI Aayog
- b) Ministry of Electronics and Information Technology
- c) Science and Engineering Research Board
- d) None of the above

Answer: A

Explanation

- A survey was conducted by **Development Monitoring and Evaluation Office (DMEO), NITI Aayog**, to assess different Ministries /Departments" performance on the implementation of Central Sector Schemes (CS) and Centrally Sponsored Schemes (CSS).
- **Department of Fertilisers has been ranked third out of 65 departments/ministries** based on its performance in the implementation of central schemes. It is in second place among 16 economic ministries/departments.
- The DMEO has undertaken Data Governance Quality Index (DGQI) exercise: self-assessment based review of **data preparedness levels across ministries/departments** to produce a DGQI scorecard.
- Accordingly, a survey was initiated to assess the data preparedness of ministries/departments on a standardised framework to drive healthy competition among them and promote cooperative peer learning from best practices.
- In the survey, an online questionnaire was prepared under **six major themes of DGQI** -- data generation; data quality; use of technology; data analysis, use and dissemination; data security and HR capacity and case studies.

2. Gupkar Declaration, recently in news, was related to which among the following?

- a) Tiger Conservation
- b) Defending special status of Jammu and Kashmir
- c) Climate Change
- d) Child Rights

Answer: B

Explanation:

A year after the revocation of the special status of Jammu and Kashmir and its bifurcation into two Union Territories, mainstream political parties have recently formalised an alliance to seek "**restoration**" of the erstwhile state's special position before August 5, 2019. They have decided to formally name the alliance as '**People's Alliance for Gupkar Declaration**'.

About Gupkar Declaration

- On August 4, 2019, a day before the Union government announced the abrogation of the special status of Jammu and Kashmir, a group of politicians met at the residence of National Conference president Farooq Abdullah at Gupkar Road in Srinagar.

- The joint statement issued by the political parties, expressing concern over the situation, came to be known as the **Gupkar Declaration**. The resolution had parties unanimously agreeing to **unify in their efforts to protect and defend the identity, autonomy and special status of Jammu and Kashmir**.
- Just a day after this, on 5 August 2019 however, the central government revoked the special status under Article 370 and split Jammu and Kashmir into two Union Territories.
- With most political leaders now released from detention, efforts are on to renew the movement by signing the Gupkar Declaration 2.0.

3. Consider the following statements about Ambedkar Social Innovation and Incubation Mission (ASIIM):

1. ASIIM aims to promote entrepreneurship among Divyangs.
2. Only projects identified by Technology Business Incubators (TBIs) are eligible for ASIIM.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: A

Explanation

- The Ministry of Social Justice and Empowerment has launched the Ambedkar Social Innovation and Incubation Mission (ASIIM) under Venture Capital Fund for SCs.
- It intends to encourage SC students studying in higher educational institutions to innovate and become entrepreneurs.

Objectives of ASIIM

- Promote entrepreneurship among the Scheduled Caste (SC) youth, with special preference to Divyangs.
- Support, promote and hand-hold the start-up ideas till they reach commercial stage by providing equity support.
- Incentivise students with innovative mind-set to take up entrepreneurship with confidence.

Provisions Under ASIIM

- 1,000 SC youth with start-up ideas would be identified in the next 4 years (till 2024), in various higher educational institutions.
- They will be funded up to Rs. 30 lakhs in 3 years as equity funding so that they can translate their start-up ideas into commercial ventures.
- Successful ventures would further qualify for funding of up to Rs. 5 Crore from the Venture Capital Fund for SCs.

Eligibility

- The following SC/Divyang youth would be eligible for support under ASIIM:
 - Youth who have been identified by the Technology Business Incubators (TBIs) being promoted by Department of Science & Technology.
 - Youth who are identified by reputed private TBIs.
 - Students who have been awarded under the Smart India Hackathon or Smart India Hardware Hackathon being conducted by Ministry of Education.

- Innovative ideas focusing on the socio-economic development of the society identified in the TBIs.
- Start-ups nominated and supported by corporates through Corporate Social Responsibility (CSR) funds.

Venture Capital Fund for SCs (VCF-SC)

- The ASIIM initiative will be implemented by the Venture Capital Fund for SCs which was set up in 2016, with the fund size of Rs. 500 crore.
- The fund was launched to develop entrepreneurship among the SC/Divyang youth by providing concessional finance to them.
- Since its inception, VCF-SC has sanctioned financial assistance to 118 companies with an amount of Rs. 444.14 crore.

4. The Crime in India report is released by:

- a) **Bureau of Police Research and Development**
- b) **National Crime Records Bureau**
- c) **National Investigation Agency**
- d) **None of the above**

Answer: B

Explanation:

- The National Crime Records Bureau recently released the Crime in India report 2019.
- The NCRB collected data from 36 states and Union Territories and 53 metropolitan cities. West Bengal did not share its latest data and its 2018 data has been used to arrive at national and city-wise figures.

Highlights Of The Report

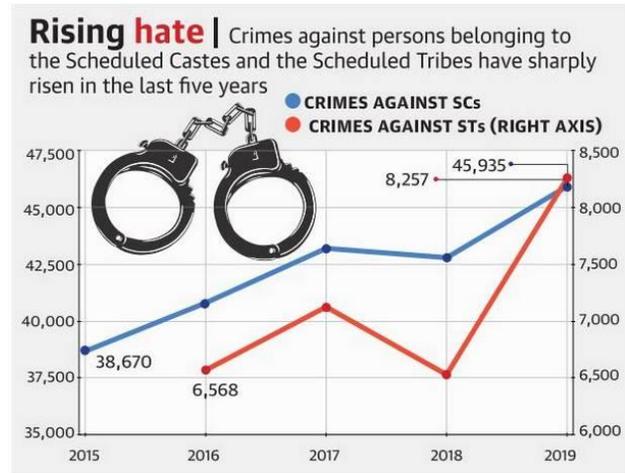
- Nearly 5.2 million cognisable crimes were reported across India in 2019. These cognisable crimes include those covered under the Indian Penal Code (IPC) as well as those covered under various Special and Local Laws (SLL).
- While the first category saw a rise of about 3%, the number of cases under the second decreased by 0.6%.
- Nearly every third case registered under the IPC in 2019, i.e., about 1.1 million, was regarding offences affecting the human body such as murder, rape, causing death, kidnapping, etc.

Crimes Against Women

- A total of 4,05,861 cases of crime against women were registered during 2019, showing an increase of 7.3% over 2018.
- UP reported the highest number of crimes against women (59,853), accounting for 14.7 per cent cases across the country. It was followed by Rajasthan and Maharashtra.
- Assam reported the highest rate of crime against women at 177.8 (per lakh population), followed by Rajasthan (110.4) and Haryana (108.5).
- Rajasthan reported the highest number of rapes with 5,997 cases, followed by UP and Madhya Pradesh. In terms of rate of rape cases, Rajasthan was the highest at 15.9 (per lakh population), followed by Kerala (11.1) and Haryana (10.9).
- UP also had the highest number of crimes against girl children under the POCSO Act with 7,444 cases, followed by Maharashtra and MP.

Crimes Against SCs

- A total of 45,935 cases were registered as crime against Scheduled Castes (SCs), showing an increase of 7.3% over 2018. Crime rate registered showed an increase from 21.2 (per lakh population) in 2018 to 22.8 in 2019.
- Simple hurt with 28.9% (13,273 cases) formed the largest chunk of cases of crimes against Scheduled Castes during 2019. It was followed by cases under SC/ST (Prevention of Atrocities) Act with 9.0% and cases under rape with 7.6%.
- UP reported the most cases against Scheduled Castes – 11,829 cases, accounting for 25.8 per cent of the cases across the country. It was followed by Rajasthan and Bihar.
- However, the rate of such cases was highest in Rajasthan at 55.6 (per lakh population), followed by MP (46.7) and Bihar (39.5).
- Rajasthan also had the highest number of rapes against Dalit women (554), followed by UP and MP.



Crimes Against STs

- A total of 8,257 cases were registered for committing crime against STs, an increase of 26.5% over 2018.
- Madhya Pradesh recorded the highest number of cases against STs as it recorded 1,922 cases, followed by Rajasthan and Odisha.
- The highest number of incidents of rape of tribal women was registered in Madhya Pradesh, followed by Chattisgarh and Maharashtra.

Cyber Crime

- Cybercrimes increased by 63.5% in 2019. A total of 44,546 cases were registered under cybercrimes, compared to 27,248 cases in 2018.
- 60.4% of cybercrime cases registered were for the motive of fraud, followed by sexual exploitation (5.1%) and causing disrepute (4.2%).

National Crime Records Bureau (NCRB)

- The NCRB is an Indian government agency responsible for collecting and analysing crime data as defined by the Indian Penal Code (IPC) and Special and Local Laws (SLL).
- NCRB is headquartered in New Delhi and is part of the Ministry of Home Affairs (MHA). It was set-up in 1986 to function as a repository of information on crime and criminals so as to assist the investigators in linking crime to the perpetrators.
- **Mission**
 - To empower Indian police with information technology and criminal intelligence to enable them to uphold law and protect people.
 - To provide leadership & excellence in crime analysis particularly for serious and organized crime.

5. Consider the following statements about Ayushman Sahakar Scheme:

1. Under the Scheme, National Cooperative Development Corporation will give term loans to cooperatives to set up medical education infrastructure.

2. The scheme will assist promotion of AYUSH facilities by cooperative societies.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: C

Explanation:

- The Centre has launched the Ayushman Sahakar scheme to involve co-operatives in creating healthcare infrastructure in the country. Under the scheme, the National Cooperative Development Corporation (NCDC) will give loans to cooperatives to set up healthcare facilities.
- The scheme aligns itself with the focus of the National Health Policy 2017, covering health systems in all their dimensions.
- The various dimensions include investments in health, organisation of healthcare services, access to technologies, development of human resources and affordable healthcare to farmers.

Background

- It has been observed that due to lack of credit support, many cooperative hospitals find difficulty to start new aspects of medical education including colleges offering MBBS, BDS, BAMS programmes.
- Moreover, the ongoing pandemic has brought into focus the need to strengthen health infrastructure in rural areas.
- The scheme takes inspiration from the successful work cooperatives have done in the healthcare sector in Kerala. The NCDC has so far financed around 30 hospitals in Kerala.

Provisions Of The Scheme

- Under the scheme, the NCDC will give loans to eligible cooperatives totalling Rs 10,000 crore in the coming years. The assistance will flow either through state governments/ UT administrations or directly to the eligible cooperatives.
- The scheme would specifically cover establishment, modernisation, expansion, repairs, renovation of hospitals, and healthcare and education infrastructure encompassing all hospitals & Ayush facilities.
- It would also cover yoga wellness centre, ayurveda, allopathy, unani, siddha, homoeopathy and other traditional medicine healthcare centres.
- The scheme also provides working capital and margin money to meet operational requirements. It also provides interest subvention of one percent to women majority cooperatives.
- Any cooperative society with suitable provision in its bye-laws to undertake healthcare related activities will be able to access the NCDC fund.

Benefits

- There are about 52 hospitals across the country run by cooperatives, with a cumulative bed strength of more than 5,000. The NCDC fund will give a boost to provision of healthcare services run by cooperatives.
- In the process, the scheme would revolutionise the way healthcare delivery takes place in rural areas.

National Cooperative Development Corporation (NCDC)

- NCDC is an apex level statutory autonomous institution set up in 1963. It functions under the administrative control of the Ministry of Agriculture and Farmers Welfare.

- It has been created for the purpose of promoting programmes for the production, marketing, storage, export and import of agricultural produce, industrial goods and services like hospital & healthcare and education etc. on cooperative principles.
 - It extends financial assistance to cooperatives and is the most preferred financial institution for cooperatives.
6. Consider the following statements regarding STARS project:
1. The STARS project is a Central Sector Scheme.
 2. The STARS project is partially funded by the World Bank.
 3. A National Assessment Centre called PARAKH will be established under the STARS project.

Which of the statements given above is/are correct?

- a) 1 only
- b) 3 only
- c) 1 and 2 only
- d) 2 and 3 only

Answer: D

Explanation:

- The Union Cabinet has approved the implementation of **Strengthening Teaching-Learning and Results for States (STARS)** project, partially funded by the World Bank.
- The project will have a total project cost of ₹5,718 crore, with the **World Bank's support** amounting to about ₹3,700 crore (\$500 million).
- The STARS project would be implemented as a new **Centrally Sponsored Scheme** under Department of School Education and Literacy, Ministry of Education.
- The overall focus and components of the STARS project are aligned with the objectives of National Education Policy (NEP) 2020 of 'quality based learning outcomes'.
- The project shifts focus from the provision of inputs and maintaining of outputs to actual outcomes by linking the funds to these outcomes.
- The STARS project has **two main components** viz. National level component and State level component.

National Level Component

At national level, the project has planned the following interventions which will benefit all states and UTs:

National Assessment Centre

- A major component of the project is the establishment of **PARAKH** (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development) as a National Assessment Centre.
- Included in NEP, 2020, this autonomous institution under the Union Education Ministry will set norms for student assessment and evaluation for all school boards across the country. Currently most state boards follow norms set by State governments.
- It will also guide standardised testing to monitor learning outcomes at the State and national levels, according to the NEP.

Emergency Response

- The project includes a **Contingency Emergency Response Component (CERC)** under National Component which would enable it to be more responsive to any natural, man-made & health disasters.

- It will help the government to respond to situations that lead to loss of learning such as school closures/infrastructure damage, inadequate facilities etc.
- The CERC component will also facilitate the quick re-categorization of financing and the utilization of streamlined financing request procedures.

State Level Component

- At the State level, the project **covers 6 States** namely Himachal Pradesh, Rajasthan, Maharashtra, Madhya Pradesh, Kerala and Odisha.
- The project aims to improve the overall monitoring and measurement activities in the Indian school education system through interventions in selected states.
- In these states, the project seeks to improve education outcomes and school-to-work transition strategies for better labour market outcomes.
- The identified States will be supported for various interventions in the following areas:
 - Strengthening early childhood education and foundational learning.
 - Improving learning assessment systems.
 - Strengthening classroom instruction through teacher development and school leadership
 - Decentralized management for improved service delivery.
 - Strengthening vocational education in schools through career guidance and counselling, internships and coverage of out of school children.

7. Consider the following statements about Free Coaching for SC and OBC Students scheme:

1. The scheme is implemented by the Ministry of Education.
2. The funding of the scheme is shared between the Centre and the States.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: D

Explanation:

From this year, under the Centre's free coaching scheme for scheduled caste and OBC students, candidates will be able to take **admissions in the institute of their choice**, instead of being randomly allotted institutes by the government.

Details Of The Scheme

- The Free Coaching Scheme for SC and OBC Students is implemented by the **Ministry of Social Justice and Empowerment**.
- The objective is to provide coaching of good quality for economically disadvantaged Scheduled Castes (SCs) and Other Backward Classes (OBCs) candidates.
- It aims to enable them to appear in competitive examinations and succeed in obtaining an appropriate job in public/private Sector.
- The scheme is a **Centrally sponsored scheme** and the **Ministry of Social Justice and Empowerment** funds the entire fees for the coaching provided to selected candidates.
- Only students belonging to SCs and OBCs having total family income from all sources of **Rs 8 lakh or less per annum** are eligible for benefits under the Scheme.

Selection Process For Institutes

- The institutes are considered by a **Selection Committee** based on their past record of performance and other criteria determined by the Selection Committee.
- The **eligibility criteria** for selection of coaching institutions is:
 - The institute should be a registered body or run by any organization registered under the Societies Registration Act, 1860/Companies Act, 2013 or any other relevant Act of the State/Union Territory.
 - The institute should have been registered for a period of at least 3 years for empanelment by the Ministry.
 - The institute should have been fully functional for a minimum period of 3 years at the time of applying under the Scheme.
 - The institute must have proper infrastructure to meet all requirements for providing coaching in the courses applied for.
- The institutes for providing coaching are finally selected by the Ministry of Social Justice and Empowerment based on the recommendations of the Selection Committee.

Reasons for the current changes

- While the scheme seeks to train the candidates for their goals, the best institutes in the business do not empanel with the government.
- It is because the fee structure of these institutes is higher than what the government approves or because they have a strong business in the open market.
- This deprives the candidates from the marginalised communities from taking admissions in good institutes.

New changes announced

- The ministry funds around 4,000 SC and OBC students a year for coaching. The new change announced will be implemented partially this year.
- Around 2,000 students will be picked through the old mode and nearly 2,000 more will be allotted coaching centres of their choice through the new plan.
- Moreover, with time, the entire scheme will move towards the new structure which will focus on the students' choice.

8. Which of the following are Non-communicable diseases?

1. Parkinson's disease
2. Alzheimer's disease
3. Hepatitis B
4. Rheumatoid arthritis
5. Cataract

Choose the correct option using the codes below:

- a) 3 and 5 only
- b) 1, 2 and 4 only
- c) 1, 2, 4 and 5
- d) 1, 2, 3, 4 and 5

Answer: C

Explanation:

The Global Burden of Disease (GBD) study 2019, was recently published in The Lancet journal. The study has analysed 286 causes of death, 369 diseases and injuries, and 87 risk factors in 204 countries. The findings from the study also provide new insights on how well countries were prepared in terms of health for the Covid-19 pandemic.

Findings Of The Study

- The trend in most countries points to a decline in infectious diseases and a rise in chronic diseases.
- The study warns that the greatest cumulative impact on health comes from the significant rise in metabolic risks like high blood sugar, hypertension, and high cholesterol.
- These metabolic risks have grown by 50 per cent since 1990, and are responsible for a huge number of deaths globally.
- High blood pressure contributed to 1 in 5 deaths (almost 11 million) in 2019, followed by high blood sugar (6.5 million deaths), high Body Mass Index (5 million), and high cholesterol (4.4 million).
- The study also pointed that several risk factors and Non Communicable Diseases (NCDs), including obesity and diabetes, are associated with increased risk of death from COVID-19.

Non-Communicable Disease (NCD)

- A non-communicable disease is a non-infectious health condition that cannot be spread from person to person. It also lasts for a long period of time and is therefore also known as a chronic disease.
- A combination of genetic, physiological, lifestyle, and environmental factors can cause these diseases. Some risk factors include: unhealthy diets, lack of physical activity, smoking and excessive use of alcohol.
- NCDs include Parkinson's disease, autoimmune diseases (like rheumatoid arthritis), strokes, most heart diseases, most cancers, diabetes, chronic kidney disease, osteoarthritis, osteoporosis, Alzheimer's disease, cataracts.

Findings from South Asia

- In the South Asia region, NCDs now contribute to more than half of the years lost due to ill-health, disability or early death. This was dominated by infectious, maternal, neonatal, and nutritional diseases 30 years ago.
- Bhutan, Nepal, and Bangladesh have seen the proportion of total health loss (DALYs) caused by the rise of NCDs, by more than 150 per cent since 1990.

Findings from India

- The leading risk factor for total health loss in India in 2019 was child and maternal malnutrition, while the second leading risk factor was air pollution.
- According to the report, 58 per cent of the total disease burden in India is now due to non-communicable diseases, up from 29 per cent in 1990, while premature deaths due to NCDs have more than doubled from 22 to 50 per cent.
- The leading non-communicable cause of death in India in 2019 was heart disease with 1.52 million deaths, followed by pulmonary disorders (8,98,000), stroke (6,99,000), diabetes (2,73,000) and cirrhosis and other liver diseases (2,70,000).

Gains In Life Expectancy

- India has gained more than a decade of life expectancy since 1990, rising from 59.6 years to 70.8 years in 2019.
- However, there are wide inequalities between states, ranging from 77.3 years in Kerala to 66.9 years in Uttar Pradesh.

- The increase in 'healthy' life expectancy (life without illness) in India, which was 60.5 years in 2019, has not been as significant as the growth of 'life expectancy'. Thus, people are living more years with illness and disability.

Way Ahead

- The world is failing to change unhealthy behaviours, particularly behaviours related to diet quality, caloric intake, and physical activity. This is due to inadequate policy attention and funding for public health and behavioural research.
- Most of these risk factors are preventable and treatable, and preventing them will bring huge social and economic benefits.
- Thus, countries must work on policies and strategies that stimulate economic growth, urgently address the social issues in the domain of poverty, housing, education, and race, which are all strong determinants of health.

Global Burden of Disease

- The Global Burden of Disease Study (GBD) is a comprehensive regional and global research program of disease burden that measures mortality and disability from major diseases, injuries, and risk factors.
- Beginning in 1990 as a **World Bank-commissioned study**, the project measured the health effects of more than 100 diseases and injuries for eight regions of the world.
- It also introduced the **disability-adjusted life year (DALY)** as a new way to measure the burden of diseases, injuries, and risk factors. The disability-adjusted life year (DALY) is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death. It not only includes the potential years of life lost due to premature death, but also includes equivalent years of 'healthy' life lost due to poor health or disability.

9. Which of the following states recently became the first Har Ghar Jal state:

- a) Tamil Nadu
- b) Sikkim
- c) Gujarat
- d) Goa

Answer: D

Explanation:

- Goa recently became the first 'Har Ghar Jal' state in the country by providing 100% Functional Household Tap Connections (FHTCs) in rural areas covering 2.30 lakh households.
- The government's Jal Jeevan Mission announced last year, aims to provide piped water to all rural households by 2024.
- The state used existing schemes including MGNREGA, Swachh Bharat Mission (Gramin) for strengthening of drinking water sources, water supply and grey water treatment.
- According to experts, the relatively small size of the state, availability of water, and awareness among residents are the advantages that Goa had.

Way Ahead

- To strengthen water testing facilities, the state is in process of getting 14 water quality testing laboratories accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL).

- The Jal Jeevan Mission also mandates training five persons in every village, especially women, in using field test kits so that water can be tested there.
- The state now plans to extend sensor-based service delivery monitoring system to assess the functionality of water supply to ensure that prescribed quality is being provided to every rural household on regular and long-term basis.
- Goa's achievement is an example for other States to replicate and to ensure every rural home gets tap connection. Especially in the times of Covid-19 pandemic, it is all the more important to have assured safe water supply within households.

10. Consider the following statements about Annual Status of Education Report (ASER):

1. ASER is a household based survey of children's schooling and learning status.
2. ASER survey covers both rural and urban areas.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: A

Explanation:

- The latest Annual Status of Education Report (**ASER 2020**) was recently released by the non-profit **Pratham Education Foundation**.
- The survey was conducted via phone calls, in September, 2020 - the sixth month of national school closures due to the pandemic, in 26 states and four Union Territories and a total of 52,227 households and 59,251 children in the 5-16 age group were covered.
- This year the survey explores access to distance education mechanisms, materials and activities for children in rural India. It also explores the ways in which children and families are engaging with these remote learning alternatives from their homes.

Highlights Of The Report

School Enrolment

- The survey shows that 5.5 per cent children are not currently enrolled for the 2020-21 school year, up from 4 per cent in 2018.
- This increase is the highest among the youngest children (ages 6 to 10). 5.3% of rural children aged 6-10 years had not enrolled in school this year, in comparison to just 1.8% in 2018. This indicates that due to the pandemic, families are waiting for the physical opening of schools to enrol their youngest children.
- At all-India level, there has been a small shift towards government schools between 2018 and 2020, across all grades and among both girls and boys. This could be partly because of economic difficulties due to the pandemic.

Learning hit

Some highlights from the Annual Status of Education Report's September survey:

- 5.3% of rural children aged 6-10 years are not enrolled in school this year, in comparison to just 1.8% in 2018
- Around 20% of rural children did not have textbooks at home by September
- About 70% of rural

children did some learning activity. Of these, only 11% had live online classes

- Less than 36% of rural children received some learning materials or activities from the school. Almost 75% of such school interaction was via Whatsapp

- The proportion of **boys** enrolled in government schools rose from 62.8% in 2018 to 66.4% in 2020. Similarly, the proportion of **girls** enrolled in government schools rose from 70% to 73% during the same period.

Digital Learning

- Among enrolled children, the percentage of families with at least one smartphone has increased significantly in the past two years, from 36.5% to 61.8%.
- In households where children are enrolled in **government schools**, the percentage of smartphone ownership has increased from 29.6% in 2018 to 56.2% in 2020.
- In the same period, in households where children are in **private schools**, the percentage of smartphone ownership has increased by 24% to 74.2% in 2020.

Textbook Availability

- In a sign that governments have improved their systems to respond to the crisis, overall more than 80 per cent children said they had textbooks for their current grade.
- This proportion was higher among students enrolled in government schools (84.1 per cent) than in private ones (72.2 per cent).
- Across states, the proportion of children with textbooks at home falls below 70% in only three states: Rajasthan (60.4%), Telangana (68.1%), and Andhra Pradesh (34.6%).

Way Ahead

- After schools re-open, it will be important to monitor who goes back to school, and whether there is learning loss in students, as compared to previous years.
- For government schools, the growth in footfall is an opportunity to improve the quality of teaching and retain students, as has been shown by government schools in Karnataka, Kerala and Delhi.
- Taking note of the high proportion of learning support provided by families, the report recommends that schools must find ways to build on that home support going forward.
- Moreover, there is a need to invest more in improving the digital infrastructure to aid learning of students.

ASER

- ASER is a nationwide survey of **rural** education and learning outcomes in terms of reading and arithmetic skills that has been conducted by the NGO Pratham, since 2005.
- Large sums of money are invested into various social sector programs including education, but lack of information on the impact of these investments is a major barrier in evaluating their effectiveness.
- ASER seeks to use simple yet rigorous methods to generate evidence on the outcomes of such social sector programs.
- It aims to strengthen the link between evidence and action by building the capacity of individuals and institutions to design, conduct and understand assessments that focus on key outcome indicators.

11. Consider the following statements regarding Dam Rehabilitation and Improvement Project (DRIP):

1. DRIP aims to strengthen the dam safety institutional set-up in States.
2. DRIP will receive financial assistance from the World Bank and the Asian Infrastructure and Investment Bank.
3. Under DRIP, tourism based activities will be developed at the existing dams.

Which of the statements given above is/are correct?

- a) 1 only
- b) 1 and 2 only
- c) 2 and 3 only
- d) 1, 2 and 3

Answer: D

Explanation:

- The Union Cabinet has approved Phase II and Phase III of **Dam Rehabilitation and Improvement Project (DRIP)** to improve the safety and operational performance of 736 dams in 19 states.
- The project is focused on reducing the risks of dam failure and ensuring safety of people, riverine ecology and property located downstream of these selected dams.

Status Of Dams In India

- In terms of large dams, **India ranks third globally** after China and the United States of America, with 5334 large dams in operation. There are also several thousand smaller dams.
- Indian dams and reservoirs play an important role in the economic and agricultural growth of the country by storing approximately 300 billion cubic meter of water annually.
- However, 80% of the existing dams are more than 25 years old, with some dams that are 100-year-old. These dams require maintenance and capacity building, as they were built using older technology.
- The consequences of dam failure can be very dangerous, in terms of loss of human life and property, and damage to ecology.

Phase I of DRIP

- The first phase of the programme, which ended in 2020, was launched in 2012, under which 223 dams in seven states were included. It helped in addressing the **structural measures** to improve safety, seepage reduction, structural stability etc.
- Apart from this, **non-structural measures** such as emergency action plans, operation and maintenance manuals, early warning system and various other measures were put in place for the selected dams.
- In addition, **DHARMA** (Dam Health and Rehabilitation Monitoring), a system to monitor the health of dams, has been developed and is, at present, being used by 18 states.
- A seismic hazard analysis information system (**SHAISYS**) has also been developed under the first Phase. Seismic hazard analysis involves the estimation of ground shaking hazards at a particular area.

Details of Phase II and III

- The project will be implemented over a period of 10 years in two phases -- each of six years' duration with two years overlapping from April 2021 to March 2031.
- In addition to physical rehabilitation, equal emphasis will be given to capacity building of dam owners in order to ensure availability of trained and skilled manpower for better operation of dams.
- Four per cent of the total cost of the project will be spent for building tourism-based activities, including water tourism at the existing dams.
- The overall cost of the project is Rs 10,211 crore and it will receive financial assistance from the World Bank (WB), and Asian Infrastructure Investment Bank (AIIB).
- The Union government will facilitate access to external financing, and also provide technical support to assess risk and strengthen dam safety in the state.

Benefits

- The programme will enhance water security in the country, and support sustainable development.
- Extending the life of these dams, will lead to benefits such as irrigation, hydel power, flood control etc. for a longer period.
- It is likely to generate employment opportunities equivalent to approximately 10,00,000 person days for unskilled workers, and 2,50,000 person days for working professionals.
- The programme will enable states and dam owners to extend these safety protocols and activities beyond the selected dams to all other dams within their jurisdiction.
- Thus, the programme will eventually strengthen the overall culture of dam safety in the country.

12. The 'Meri Saheli' initiative has been launched by?

- a) Ministry of Women and Child Development
- b) Ministry of Skill Development
- c) Indian Railways
- d) None of the above

Answer: C

Explanation

- The Indian Railways has launched the 'Meri Saheli' initiative for focused action on security of women passengers during their entire journey.
- The initiative was started as a pilot project in the South Eastern Railway in September 2020 and after getting positive response from women passengers, it was extended to all zones.
- Under the initiative, a team of lady officer and staff have been formed. The team will visit all of the passenger coaches including ladies coaches to identify women passengers.
- These women passengers will then be briefed about all precautions to be taken during the journey and told to dial 182 in case they face or see any problem in the coach

13. The Indian Sign Language Research and Training Centre is an autonomous institute of?

- a) Ministry of Education
- b) Ministry of Skill Development
- c) Ministry of Social Justice and Empowerment
- d) None of the above

Answer: C

Explanation

- The National Council of Educational Research and Training (NCERT) has signed an MoU with the Indian Sign Language Research and Training Centre (ISLRTC) to make textbooks and other educational material accessible for hearing impaired children in Indian sign language.
- So far, hearing-impaired children used to study only through a verbal or written medium but after the signing of this MoU, they can study through a single Indian Sign Language (ISL).
- The MoU would lead to standardisation of educational materials in ISL as mandated by the New Education Policy 2020.

- NCERT textbooks, teacher's handbooks and other materials for Class I-XII of all subjects in Hindi and English medium would be converted into ISL in digital format. This will not only enhance their vocabulary, but also enhance their capabilities to understand concepts.

Indian Sign Language (ISL)

- ISL is a set of hand and facial gestures used to communicate, most often by the hearing and speech impaired.
- It has its own grammar, syntax and regional dialects, essentially different gestures for the same word or sentiment.
- Research over the years has found that the ISL shares several similarities with the sign languages used in Pakistan and Nepal.
- The main difference from spoken languages lies in form: Sign languages are visual, spoken ones are auditory.

ISLRTC

- The ISLRTC is an autonomous national institute of the Ministry Of Social Justice And Empowerment.
- It is dedicated to developing manpower for popularising the use of Indian Sign Language, teaching and conducting research.

14. Consider the following statements about Commitment to Reducing Inequality (CRI) Index 2020:

1. The CRI index is published by United Nations Development Programme.
2. The CRI index aims to measure inequality in different countries.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: D

Explanation:

- The **Commitment to Reducing Inequality (CRI) Index 2020** was recently released. This is the third edition of the report.
- The CRI Index is developed and delivered through a partnership between **Development Finance International and Oxfam International**, with inputs from independent experts.
- The index doesn't aim to measure inequality, instead it focuses on what each government is doing to fight inequality.
- The 2020 index ranks 158 governments on their policies on public services, tax and workers' rights, the three crucial areas to reduce inequality.

Global Highlights

- The index highlights that no country in the world was doing enough to fight inequality prior to the pandemic. It shows that only 26 out of 158 countries were spending a recommended 15 % of their budgets on health.
- Only a third of the global workforce had adequate social protection and in 103 countries at least one in three workers lacked basic labour rights and protections, like sick pay, when the virus struck.

- As a result, many have faced death and destitution and inequality is increasing significantly.
- Globally, low-income nations have been more tax-progressive. This means that they are collecting closer to the amount they should be collecting.
- At the bottom of the public services pillar ranking, South Asian countries in particular are doing too little to fight inequality.

Rankings

- The top 10 countries in the index in descending order are **Norway (1st)**, Denmark, Germany, Belgium, Finland, Canada, France, New Zealand, Austria and Sweden.
- Most of the countries near the top of the index are OECD countries. With higher GDP, they have much more scope to raise tax revenues and spend on public services and social protection. However, even the top-performing countries can do much more than what they are doing currently.
- At the bottom of the Index is **South Sudan**, which is new to the index and comes close to last on all three pillars. The other countries at the bottom are Nigeria, Bahrain, Chad and Liberia.

HOW THE SAARC NATIONS FARE

Country	Public services ranking*	Tax ranking	Labour ranking	Overall ranking
India	141	19	151	129
Pakistan	148	71	116	128
Bangladesh	142	32	109	113
Nepal	120	16	130	112
Bhutan	124	130	141	146
Afghanistan	153	6	113	102
Sri Lanka	106	91	86	94

*Health + education + social protection

Highlights From India

- India spent less than 4% of its budget on health and was ranked **155th on the health spending**, the fourth lowest in the world. Just half of its population have access to even the most essential health services, and more than 70% of health spending is being met by people themselves, one of the highest levels in the world.
- Only about 10% of the workforce in India is formal, with safe working conditions and social security. Most workers earn less than half of the minimum wage and 71% do not have any written job contract and 54% do not get paid leave.
- India has improved its tax rankings — going from 91st in 2017 to 50th in 2018 (when the last report was published) and 19th now.
- All of this, together, put India at the 129th position out of 158 countries, an improvement on the 147th rank (out of 157) last time in 2018 and close to the 132nd rank (out of 152) it got in 2017.

Way Ahead

- Governments must adopt strong anti-inequality policies on public services, tax and labour rights, to significantly reduce the gap between rich and poor.
- Governments, international institutions and other stakeholders should work together to rapidly improve data on inequality and related policies, and to accurately and regularly monitor progress in reducing inequality.
- For longer term recovery from the coronavirus pandemic, there is a strong possibility that countries will implement spending cuts to bring down debt burdens, as it did after the global financial crisis.
- To prevent this, the international community must support the countries by approving a large new issue of IMF Special Drawing Rights, debt relief.
- The international community must also introduce solidarity taxes on wealth and income from which part of the proceeds go to lower-income countries.

Additional Information

- Oxfam is an international confederation of 20 organizations founded in 1942 and led by Oxfam International. It is a part of a global movement for change, to build a future free from the injustice of poverty.

- Development Finance International is a non-profit capacity-building, advocacy, advisory and research group. It works with more than 50 governments, international institutions and civil society organisations worldwide to help development financing fight poverty and inequality.

15. MACS-6478 is a variety of:

- a) Rice
- b) Wheat
- c) Barley
- d) None of the above

Answer: B

Explanation:

- A new wheat variety MACS-6478 is helping farmers in a village in Maharashtra to double their yield.
- The wheat variety was developed by Agharkar Research Institute, an autonomous institute of the Department of Science and Technology.
- The farmers of the village in Koregaon tehsil of Satara district in Maharashtra are now getting a yield of 45 to 60 quintal per hectare with the new variety as against earlier average yield ranging 25 to 30 quintal per hectare, when they cultivated other old varieties.
- The newly developed common wheat or bread wheat, also called high yielding Aestivum, matures in 110 days and is resistant to most races of leaf and stem rust.
- The amber coloured medium sized grain contains 14 percent protein, 44.1 ppm zinc and 42.8 ppm iron which is higher than other cultivated varieties.

16. Consider the following statements about Anti-trust laws:

1. Anti-trust laws also referred to as competition laws.
2. Anti-trust laws protect consumers from unjust business practices.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: C

Explanation:

- The US Department of Justice (DOJ) has filed an anti-trust lawsuit against Google. As per the DOJ, Google has unlawfully maintained a monopoly in internet search, that harms competitors and consumers.
- Other major technology companies including Apple, Amazon and Facebook are also under investigation at the Justice Department.

Allegations Against Google

- The DOJ claims Google holds 88% of the U.S. search market, with 94% of mobile searches occurring on its services and that Google has used its monopoly power to keep competitors out of the internet search market, through various deals.

- Google pays Apple billions of dollars a year to keep Google's search engine as the default option on iPhones and other devices.
- Google also has contracts with smartphone makers that use Google's Android operating system. These contracts require the smartphone manufacturers to install Google's search engine as the default search engine.
- The Justice Department has also investigated Google's behaviour and acquisitions in the overall market for digital advertising, which includes search, web display and video ads.

Harm To Consumers

- The department claims Google's conduct has harmed consumers by lowering the quality of search services and reducing choice.
- In theory, this behaviour can close the market to rivals that collect less data for targeted advertising than Google.
- Thus, enhanced privacy can be a consumer benefit in the absence of such monopolies.

Google's Defence

- Google has argued that although its businesses are large, they are useful and beneficial to consumers. It shared that its services face decent competition and have led to innovations that help people manage their lives and have helped to keep the prices of smartphones low.
- Consumers choose to use Google's services because they want to, as consumers can switch away from services like Google Search even if it's the default option.
- Moreover, consumers use plenty of specialized search engines like Expedia for travel and even platforms like Twitter to seek information outside of Google's services.
- Google claims that the lawsuit will do nothing to help the consumers. In fact, it will help low quality search alternatives, raise phone prices and make it harder for people to get the search services they want to use.

Antitrust laws

- Antitrust laws, also referred to as competition laws, are laws developed by governments to protect consumers from unjust business practices and to ensure fair competition.
- Antitrust laws are applied to a wide range of questionable business activities, including market allocation, bid rigging, price fixing, and monopolies.
- The goal of these laws is to provide an equal business environment to similar businesses that operate in a specific industry, while preventing them from gaining too much power over their competition.
- If these laws didn't exist, consumers would not benefit from different options or competition in the marketplace. Furthermore, consumers would be forced to pay higher prices.

17. Consider the following statements about kharif and rabi crops:

1. Kharif and Rabi originate from Arabic language where Kharif means autumn and Rabi means Spring.
2. Onion is both a Kharif crop as well as a Rabi crop.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: C

Explanation:

- The government has imposed stock limit norms under the Essential Commodities Act for onions, as prices continued to increase significantly across the country.
- The move comes after the government had recently amended Essential Commodities Act, 1955, to exclude onions, pulses, potatoes, edible oils and oilseed from the list of essential commodities.
- The Essential Commodities Act has a provision to invoke the stock limit clause in extraordinary price-rise situations.

Onion Crops In India

- There are **three main onion crops** — **kharif** (June-July sowing, post-October harvest), **late kharif** (September sowing, post-December harvest), and **rabi** (December-January sowing, post-March harvest).
- The rabi crop has the least moisture content, due to which it can be stored. This crop feeds the markets till the next crop arrives.
- Farmers, especially in Maharashtra, store it in on-field structures to protect it from moisture and light.

Reasons For The Price Rise

- Heavy rains in September have affected crops in onion growing regions of states such as Maharashtra, Gujarat, Andhra Pradesh, Karnataka, and Madhya Pradesh. The rains have hit the kharif and late kharif onion crops.
- The heavy rains in September not only destroyed the new crop but also had an impact on stored onions in states like Maharashtra, Madhya Pradesh and Gujarat, as water seeped into the structures where onions were stored.
- Further, the onion crop was affected by Anthronose and Twister bacteria. The growth of the bacteria was aided by rain, humidity and temperature.
- Moreover, the shelf life of the onion is lower this year due to overuse of urea by farmers. Last year, onion prices were good, due to which farmers used extra urea to increase the crop yield. However, this reduces the shelf life of onions.

Future Outlook

- The Centre hopes that the produce of the kharif crop will soon reach the markets and help to reduce the prices. However, the arrival of onions in the market will be delayed till end of November, due to crop damage because of heavy rainfall.
- Farmers have also highlighted the huge shortage of onion seeds. Normally, farmers generate their own seeds by allowing a portion of the crop to flower and then produce seeds.
- However, this season, the farmers skipped this step and sold their entire crop due to good price of onions. Non-availability of good seeds has caused concerns and the available seeds are being sold at a premium, which can impact the availability of onions in the next season as well.

Note: The terms kharif and rabi originate from Arabic language where Kharif means autumn and Rabi means spring.

18. Which of the following use auctions as a mode of selling?

1. Radio spectrum
2. Fishing quotas
3. Airport landing slots
4. Online advertising

Choose the correct option using the codes below:

- a) 1 only
- b) 2 and 4 only
- c) 1 and 3 only
- d) 1, 2, 3 and 4

Answer: D

Explanation

- The Royal Swedish Academy of Sciences awarded this year's Sveriges Riksbank Prize in Economic Sciences to Paul R Milgrom and Robert B Wilson. The award is popularly (although incorrectly) referred to as the Nobel Prize for Economics.
- In its announcement, the Academy said the pair is receiving the award for improvements to auction theory and inventions of new auction formats.

Auction Theory

- Essentially, auction theory is about how auctions lead to the discovery of the price of a commodity. It studies how auctions are designed, what rules govern them, how bidders behave and what outcomes are achieved.
- As auctions help to sell a variety of products, a single auction design does not fit all types of commodities or sellers. This is also true because the purpose of an auction also differs with the commodity and the entity conducting the auction.
- More often than not, private sellers want to maximise their gains while public authorities may have other goals in mind. For instance, when selling telecom spectrum, a government could either think in terms of maximising its revenues or aim at making telecom more affordable to everyone.
- How an auction is designed, therefore, has a tremendous impact not just on the buyers and the sellers but also on the broader society.

Variables In The Outcome Of An Auction

Three key variables need to be understood while designing an auction.

First Variable

- The first variable is the **rules of the auction**. The bidding behaviour in an auction varies depending on whether the rules specify open bids or closed/sealed bids.
- The behaviour would also change in case of single bids versus multiple bids, or whether bids are made one after another or everyone bids at the same time.

Second Variable

- The second variable is the **commodity or service being sold in the auction**. The important point over here is how each bidder values an item, which is not always easy to calculate.
- In terms of telecom spectrum, it might be easier to find the right value for each bidder because most bidders are likely to put the spectrum to the same use. This is called the "**common**" value of an object.
- However, this may not be the case with some other commodities, for example a painting. A particular person may derive considerably more "private" or personal value than some other person.
- In most auctions, bidders allocate both "common" as well as "private" values to the object being auctioned and this affects their eventual bids.

Third Variable

- The third variable is **uncertainty**. For instance, which bidder has what information about the object, or even the value another bidder associates with the object.
- Using auction theory, it is possible to explain how these three factors influence the bidders' strategic behaviour and thus the auction's outcome. The theory can also show how to design an auction to create as much value as possible.



Contributions of Wilson and Milgrom

- The Academy noted that, Wilson developed the theory for auctions of objects with a common value — a value which is uncertain before the auction but, in the end, is the same for everyone.
- Mr. Wilson showed what the “winner’s curse” is in an auction and how it affects bidding. For example, it is possible to overbid — \$50 when the real value is closer to \$25. In doing so, one wins the auction but loses out in reality.
- He developed a theory explaining the tendency of successful bidders to place bids lower than their own estimate of the item’s value to themselves or other buyers, because they feared paying too much (due to winner’s curse).
- Mr. Milgrom came up with a theory to deal with a mix of common and private value, and he examined the role of winner’s curse in such instances.
- He demonstrated that an auction format will give the seller higher expected revenue when bidders learn more about each other’s estimated values during the bidding process.
- According to the committee, the pair’s best-known contribution, is their work in designing new auction formats for complex situations, including the format that governments now use to allocate radio frequencies to telecom operators.

Impact

- The work of the two economists, now plays a big part in setting the price of many everyday goods and services.
- The new designs developed by them have been particularly significant for allocating public goods, such as radio spectrum, fishing quotas and airport landing slots.
- The effects of their work can also be seen in online advertising, which is now sold through auction.
- Their insights can also help hospitals and governments trying to secure protective equipment during a pandemic, from competing against each other and raising up the prices.
- This was evident this year when a shortage of personal protective equipment and ventilators led to high prices.

19. Consider the following statements about Force Majeure Clause (FMC):

1. Force Majeure Clause relieves parties from performing their respective obligations under a contract.
2. Force Majeure covers only naturally occurring events.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2

d) Neither 1 nor 2**Answer: A****Explanation:**

- Referring to the disruptions due to Covid-19, the Finance Minister recently said the economy is facing an Act-of-God like situation. Businesses are also looking towards a legal provision — the force majeure or “Act of God” clause to reduce losses.
- In February, 2020, the Finance Ministry had issued a memorandum, which highlighted the force majeure clause (FMC) in the 2017 Manual for Procurement of Goods issued by the Department of Expenditure.
- The memorandum stated that the pandemic should be considered a case of natural calamity and the FMC may be invoked, wherever considered appropriate.

Act of God and Force Majeure Clause

- The law of contracts is built around a fundamental norm that the parties involved in the contract, must perform their duties, as mentioned in the contract. When a party fails to perform its duties, it has to compensate the loss of the parties involved in the contract.
- However, there are exceptions when the performance of duties becomes impossible for the parties. The force majeure clause is one such exception, which is present in most commercial contracts.
- Under the FMC, if an event takes place that is beyond the control of the parties involved, then they cannot be held responsible for not performing their duties.
- Generally, an “Act of God” is understood to include only natural unexpected circumstances, but force majeure includes both naturally occurring events and events that occur due to human intervention. However, both Act of God and force majeure, lead to the same consequences in law.

Situations That Legally Qualify For Use Of Force Majeure

- A force majeure clause is negotiated by parties, and events that could potentially prevent the parties from performing their duties are listed in the contract.
- War, riots, natural disasters, strikes, introduction of new government policy imposition of a ban, boycotts, outbreak of epidemics and such situations are generally listed.
- While some contracts have clauses with standard circumstances, some contracts would have specific circumstances that are more focused. For example, a shipping contract would have a force majeure clause that could cover natural disaster like tsunami.
- If an event is not clearly described in the contract, then it is interpreted in a way that it falls in the same category of events that are described.

Protections In Absence Of FMC

- In case a contract does not have a force majeure clause, there are some protections in common law that can be used by the parties.
- For example, as per the Indian Contract Act, 1872 a contract becomes void if it becomes impossible to perform the duties, due to an event after the contract was signed.

Court’s Take On FMC

- Court rulings have established that force majeure cannot be invoked when performance of the contract has become difficult. It can only be invoked when the performance of the contract has become impossible.
- The Court checks whether the party has tried all other possibilities to fulfil its responsibility before invoking force majeure clause.

- In the current scenario (due to Covid-19), just vaguely claiming that a party could not perform its duties under the contract due to the pandemic will not be enough.
- The court would specifically check whether the lockdown imposed due to the pandemic locally prevented the performance of duties.
- For example, in April this year, the Bombay High Court did not accept the force majeure argument in a case where the petitioner said that it could not supply steel, due to the Covid-19 related lockdowns.
- Further, global contracts signed after the initial outbreak in Wuhan may not be able take advantage of FMC, if the contracts do not mention viral pandemics as a condition.

Global Examples

- In China, where the Covid-19 outbreak originated, the Council for Promotion of International Trade is issuing force majeure certificates to businesses. China's Supreme People's Court had also recognised the 2002 SARS outbreak as a force majeure event.
- Singapore enacted the Covid-19 (Temporary Measures) Act in April to provide relief to businesses that could not perform their contractual duties due to the pandemic.
- The Paris Commercial Court in July also ruled that the pandemic could be equated to a force majeure event.

20. Which of the following has recently been given the brand Kasturi?

- a) Methi
- b) Saffron
- c) Cotton
- d) None of the above

Answer: C

Explanation

- The Ministry of Textiles has launched the 1st ever brand and logo for Indian Cotton on 2nd World Cotton Day.
- Now India's premium Cotton would be known as 'Kasturi Cotton' in the world cotton Trade. The Kasturi Cotton brand will represent whiteness, brightness, softness, purity, uniqueness and Indianness.

Facts On Cotton Cultivation

- Cotton is one of the principal commercial crops of India and it provides livelihood to about 6 million cotton farmers.
- India is the 2nd largest cotton producer and the largest consumer of cotton in the world.
- India produces about 6 Million tons of cotton every year which is about 23% of the world cotton.
- India produces about 51% of the total organic cotton production of the world, which demonstrates India's effort towards sustainability.

Certification System

- To ensure sustainability, integrity and end-to-end traceability of the organic products, a certification system based on comparable international standards verified through internationally acceptable institutional system is required to be put in place.
- Accordingly, Ministry of Textiles through APEDA under Ministry of Commerce and Industry has prescribed a certification system for organic Cotton which will be introduced in phases in the entire textile value chain

- Similarly, prescribing a certification system for non-organic Cotton has also been taken up with APEDA so that usages of cotton can be suitably augmented.

21. New Caledonia, recently seen in news, is

- a) An independent sovereign nation
- b) A French overseas territory in the Pacific
- c) A British overseas territory in the Pacific
- d) An archipelago under the control of Australia

Answer: B

Explanation

The South Pacific territory of New Caledonia chose to remain French. It rejected independence in a tightly-fought referendum marked by a high turnout. The “No” vote won with 53.26 percent. Turnout was high, with more than 85% of voters.

Background

- New Caledonia was **colonised by France in the mid-19th century** and won greater autonomy and the right to hold up to three referendums on its political status under the **Noumea Accord, signed between French and local leaders in 1998**.
- The agreement followed a **1988 peace deal** that ended decades of conflict between the **Indigenous Kanak people** and the **descendants of European settlers** known as the **Caldoches**.
- This referendum was the second time New Caledonia held such event. In 2018, almost 57 percent of voters had also rejected independence.
- A **third referendum may be possible in 2022** if a third of the local assembly votes in favour.

New Caledonia profile

- A **French overseas territory in the Pacific**, New Caledonia has seen deep divisions between its indigenous Kanak population and Europeans.
- Kanaks represent around 39% of the population, while Europeans, most of whom were born in the territory, make up about 27%
- New Caledonia is rich in resources and accounts for around **10% of the world's nickel reserve**.

22. Consider the following statements regarding the United Nations Human Rights Council (UNHRC):

1. UNHRC is an inter-governmental body within the United Nations system.
2. The headquarters of UNHRC is in Geneva, Switzerland.

Which of the above statements is/are Not Correct?

- a) 1 Only
- b) 2 Only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: D

Explanation

- China and Russia have been elected to the United Nations Human Rights Council.

- General Assembly also elected Ivory Coast, Gabon, Malawi, Cuba, Bolivia, Uzbekistan, France and Britain to the 47-member council.
- Senegal, Nepal, Pakistan, Ukraine and Mexico were **re-elected for a second three-year term**. Council members **cannot serve more than two consecutive terms**.

Criticism

- Many analysts have **condemned the UNHRC's vote to include China, Russia and Cuba**, well known for crushing dissidents, arbitrary arrests and executions.
- Most recently China has been condemned for its **treatment of Uighur Muslims** in the country's Xinjiang region and **handling of pro-democracy protests in Hong Kong**.
- **Elected directly by secret ballot** by a majority of the U.N. General Assembly, the voting system has for years been criticized as being plagued by **corruption and back-door deals**.
- Among the other criticism is that membership is divided among geographic groups, mandating a certain number of members per region and **enabling several states to run for seats uncontested**.

About UNHRC

- The Human Rights Council is an inter-governmental body within the United Nations system made up of 47 States responsible for the promotion and protection of all human rights around the globe.
- The Human Rights Council replaced the former United Nations Commission on Human Rights.
- The Council was created by the United Nations General Assembly on 15 March 2006 by resolution.

23. Tsirkon is a hypersonic anti-ship cruise missile. It has been launched by

- a) Israel
- b) USA
- c) Russia
- d) France

Answer: C

Explanation

- Russia has successfully tested a new hypersonic anti-ship cruise missile.
- The missile could hit targets at sea and on land with a range of 1,000 kilometres and a speed of Mach 9.

24. Which of the following countries is set to send out the world's first asteroid mining robot into space?

- a) China
- b) USA
- c) France
- d) India

Answer – A

Explanation

- **China** is all set to send out the world's first mining robot into space by November this year. **A private Beijing company**, Origin Space, will send out the world's first mining robot — termed as an '**asteroid mining robot**' — into space by November 2020.

- The robot will, however, **not do any actual mining**. It will be a test mission for a preliminary assessment of asteroid mining robot's capabilities of identifying and extracting valuable resources.
- The project, if successful, can open up a trillion-dollar industry.

25. Consider the following statements regarding New Start Treaty

1. The treaty was signed in 2010 between Russia and USA.
2. It caps the number of nuclear warheads held by Washington and Moscow.

Which of the above statements is/are Correct?

- a) 1 Only
- b) 2 Only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: C

Explanation

- Russian President proposed that Russia and the United States **extend their New START arms control treaty for at least a year** without imposing any conditions.
- The treaty is about to expire in February 2021.
- However, the proposal has been rejected by the USA. According to US, the proposal to extend **New START without freezing nuclear warheads is a non-starter**.
- Also, US Administration is pushing for a **new arms control agreement** that would also include China.

About The Treaty

- The **New START treaty (Strategic Arms Reduction Treaty)** accord was **signed in 2010** by US President Barack Obama and Russian President Dmitry Medvedev.
- The pact limits each country to no more than 1,550 deployed nuclear warheads and 700 deployed missiles and bombers, and envisages **sweeping on-site inspections** to verify compliance.
- It had replaced the **Treaty of Moscow (SORT), which was to expire in 2012**.

26. Consider the following statements regarding the New Development Bank (NDB):

1. The fourth BRICS Summit in New Delhi established the NDB.
2. The bank is headquartered in Shanghai, China.
3. It works on one country one vote principle and no member has any veto powers.

Which of the above statements is/are Correct?

- a) 1 and 2 Only
- b) 1 and 3 Only
- c) 2 and 3 Only
- d) 1, 2 and 3

Answer: C

Explanation

The New Development Bank (NDB) has approved funds worth USD 741 million for infrastructure projects in India. The projects include **Delhi-Ghaziabad-Meerut Regional Rapid Transit System Project** and **Mumbai Metro Rail II Project**.

About New Development Bank (NDB):

- Also referred to as the **BRICS Development Bank**, it is a multilateral development bank established by the BRICS states.
- At the **fourth BRICS Summit in New Delhi** (2012), the participating leaders considered the possibility of setting up a new Development Bank.
- It was during the **sixth BRICS Summit in Fortaleza** (2014) that the leaders signed the Agreement establishing the New Development Bank (NDB).
- **HQ-** Shanghai, China. The **first regional office** of the NDB is in Johannesburg, South Africa
- The Agreement on the NDB specifies that **every member will have one vote no one would have any veto powers.**

27. Consider the following statements regarding Asian Development Bank (ADB):

1. It is headquartered in Manila.
2. The two largest shareholders of the Asian Development Bank are the United States and Japan.
3. ADB is an official United Nations Observer.

Which of the above statements is/are Correct?

- a) 1 and 2 Only
- b) 2 and 3 Only
- c) 1 and 3 Only
- d) 1, 2 and 3

Answer: D

Explanation

- The Asian Development Bank (ADB) and India have signed a **\$270 million loan to improve service delivery** in the state of **Madhya Pradesh**.
- The loan will be used develop water supply and integrated storm water and sewage management infrastructure and strengthen capacities of urban local bodies.

About ADB:

- ADB (founded in 1966) is an international development finance institution whose mission is to help its developing member countries reduce poverty and improve the quality of life of their people.
- **Headquartered in Manila**, and established in 1966, ADB is owned and financed by its 67 members, of which 48 are from the region and 19 are from other parts of the globe.
- The two largest shareholders of the Asian Development Bank are the United States and Japan.
- ADB is an official United Nations Observer.
- Voting rights in ADB are **distributed in proportion with members' capital subscriptions.**

28. The 50th annual Skala International Asia Area (SIAA) Congress will be held in 2021. Which of the following Indian States/UTs have been chosen to host the Congress?

- a) Lakshadweep
- b) Jammu & Kashmir
- c) Ladakh
- d) Haryana

Answer – B

Explanation

- The **UT of Jammu & Kashmir** will host the 50th annual SIAA congress in 2021.
- Skål International was founded in 1934. It is the only professional organization **promoting global Tourism** and friendship, uniting all sectors of the Tourism industry.
- It holds an annual World Congress each year in a different country.
- It is an **Affiliated Member** of the World Tourism Organization (UNWTO).
- It is **headquartered in Spain**.

29. Consider the following statements regarding the World Food Programme (WFP):

- 1. WFP has been awarded the Nobel Peace Prize 2020.**
- 2. It is a UN agency headquartered at Rome.**

Which of the above statements is/are Correct?

- 1 Only**
- 2 Only**
- Both 1 and 2**
- Neither 1 nor 2**

Answer – C

Explanation

The **Nobel Peace Prize for the year 2020** has been awarded to the **United Nations World Food Programme (WFP)**. It was also praised for "bettering conditions for peace" and **preventing the use of hunger as a weapon of war**.

About WFP

- It is the **food-assistance branch of the United Nations**. It is the world's largest humanitarian organisation addressing hunger and promoting food security.
- WFP was established in 1961 after the 1960 Food and Agriculture Organization (FAO) Conference, when the US Food for Peace Programmes, proposed establishing a multilateral food aid programme.
- The WFP was formally established in 1963 by the FAO and the United Nations General Assembly on a three-year experimental basis. In 1965, the programme was extended to a continuing basis.
- Its efforts focus on emergency assistance, relief and rehabilitation, development aid and special operations. In 2019, WFP assisted 97 million people – largest number since 2012 – in 88 countries.
- Founded in 1961, it is **headquartered in Rome**. It works closely with its two Rome-based sister organizations, the **Food and Agriculture Organization** of the United Nations and the **International Fund for Agricultural Development**.

Criticism Faced by WFP

- Early in its history, the group was accused of **bolstering the US economy by buying its produce**. The WFP has since tried to strike a balance between purchasing locally and avoiding any potential inflation of food prices.
- Some economists have also argued the WFP makes some nations overly reliant on foreign aid.

30. Consider the following statements regarding the Food and Agriculture Organization of the United Nations (FAO):

1. It is a specialized agency of the United Nations that leads international efforts to defeat hunger and improve nutrition and food security.
2. FAO established the Codex Alimentarius Commission to develop guidelines related to food standards.

Which of the above statements is/are Correct?

- a) 1 Only
- b) 2 Only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer – A

Explanation

India released a **commemorative coin of Rs 75** denomination to mark the **75th anniversary** of the Food and Agriculture Organisation (FAO) of the United Nations. This coin has been released to mark the long-standing relation of India with FAO.

About FAO

- The FAO is a **specialized agency of the United Nations** that leads international efforts to defeat hunger. It was founded in October 1945.
- The FAO is **headquartered in Rome, Italy** and maintains regional and field offices around the world.
- **FAO and the World Health Organization** created the **Codex Alimentarius Commission** in 1961 to develop food standards, guidelines and texts such as codes of practice under the Joint FAO/ WHO Food Standards Programme.

India's Association With FAO

- India has had a historic association with FAO. Indian Civil Service Officer Dr **Binay Ranjan Sen** was the Director General of FAO during 1956-1967.
- The World Food Programme, which has won the Nobel Peace Prize 2020, was **established during his time**.
- India's proposals for the **International Year of Pulses in 2016** and the **International Year of Millets 2023** have also been endorsed by FAO.

31. Consider the following statement regarding the Organisation for Economic Co-operation and Development (OECD):

1. OECD is a group of 37 member countries that discuss and develop economic and social policy.
2. The OECD maintains a so-called "black list" of nations that are considered uncooperative tax havens.
3. The organization is headquartered in Paris, France.

Which of the above statements is/are Correct?

- a) 1 and 2 Only
- b) 2 and 3 Only
- c) 1 and 3 Only
- d) 1, 2 and 3

Answer – D

Explanation

India has been designated the Vice-Chair of **Good Laboratory Practice (GLP)** Working Group of the OECD.

What is GLP?

GLP is a **quality system**, which has been **evolved by OECD** to **ensure that safety data generated on various chemicals** like industrial chemicals, pharmaceuticals, cosmetic products and medical devices **can be relied upon by regulatory authorities**.

India and GLP

- The Department of Science and Technology had established the **National GLP Compliance Monitoring Authority (NGCMA)** in April, 2002.
- NGCMA is the National body which grants GLP certification to test facilities conducting safety studies on new chemicals of the mentioned categories in accordance with OECD Council norms.
- In March 2011, India became **full adherent to the Mutual Acceptance of Data (MAD)** in the OECD. The MAD status has given global recognition to India's non-clinical safety data.
- India's leadership in GLP brings a **greater recognition of the certification of quality for global businesses**.

About Organisation for Economic Co-operation and Development (OECD)

- OECD is a group of 37 member countries that discuss and develop economic and social policy. OECD members are typically democratic countries that support free-market economies.
- It was established in Dec.1960, by 18 European nations, plus the United States and Canada. It is **headquartered in Paris, France**.
- The OECD maintains a so-called "**black list**" of **nations** that are considered uncooperative tax havens, although there are not any nations currently on the list since by 2009.

32. Consider the following statements regarding the Shanghai Cooperation Organisation (SCO):

1. **SCO is a permanent intergovernmental international organization created in 2003.**
2. **India and Pakistan became the member of the organization in 2017.**

Which of the above statements is/are Correct?

- a) **1 Only**
- b) **2 Only**
- c) **Both 1 and 2**
- d) **Neither 1 nor 2**

Answer – B

Explanation

- **India hosted the 7th Justice Minister's meeting** of Shanghai Cooperation Organisation (SCO) member states.
- It was chaired by Union Law Minister Ravi Shankar Prasad.
- The meeting deliberated on areas of cooperation; creating favourable conditions for resolving disputes; and implementation of the Action Plan of the Working Groups of Experts on Forensic Activities and Legal Services.

[Also refer the topic "**SCO Meet**" from September 2020 edition of CA magazine]

About SCO

- SCO is a **permanent intergovernmental international organisation**, created in **June 2001** in Shanghai by Kazakhstan, China, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan. It was **preceded by the Shanghai Five mechanism**.
- The SCO Charter was signed in June 2002, and entered into force in September 2003.
- **India and Pakistan** became the **member of SCO in 2017** (in Astana). Currently, there are 8 members of the organization.
- The **Heads of State Council (HSC)** is the supreme decision-making body in the SCO. It meets once a year and adopts decisions and guidelines on all important matters of the organisation.
- The **SCO Heads of Government Council (HGC)** meets once a year to discuss the organisation's multilateral cooperation strategy and priority areas, to resolve current important economic and other cooperation issues, and also to approve the organisation's annual budget.
- **The SCO's official languages are Russian and Chinese.**
- The organisation has **two permanent bodies** — the **SCO Secretariat based in Beijing** and the **Executive Committee of the Regional Anti-Terrorist Structure (RATS)** based in **Tashkent**.

33. Migration and Development Brief report is published by

- a) **World Bank**
- b) **IMF**
- c) **International Labour Organisation**
- d) **World Economic Forum**

Answer – A

Explanation

- The World Bank has released its report “Migration and Development Brief”. The report is **released twice a year**.
- **Theme** of this report - **COVID-19 Crisis Through a Migration Lens**
- The report provides an update on key developments in the area of migration and remittance flows and related policies over the past six months.

Key Highlights

- The report highlighted that **remittances to India would fall** this year **by nine percent to \$76 billion** due to the ongoing coronavirus pandemic and global economic recession.
- **India followed by China, Mexico, the Philippines, and Egypt** will continue to be the **top five countries in 2020** to receive foreign remittances.
- The **foremost factors** driving the decline in remittances - **weak economic growth** and **employment levels** in migrant-hosting countries, **weak oil prices**, and **depreciation of the currencies** of remittance-source countries against the US dollar.
- This year, for the first time in recent history, the **stock of international migrants is likely to decline** as the new migration has slowed and return migration has increased.
- Rising unemployment in the face of **tighter visa restrictions on migrants** and refugees is likely to result in a further increase in return migration.

34. Five Eyes group of nations is a

- a) **Global alliance to oppose Globalization**
- b) **Global alliance to promote democracy in Syria**

- c) **Global alliance to protect the environment**
- d) **None of the above**

Answer: D

Explanation

- India is among seven countries to back a UK-led campaign **against the end-to-end encryption of the social media** messages by giants such as Facebook.
- According to these countries, end-to-end encryption hinders law enforcement by blocking all access. It prevents **law enforcement investigating and prosecuting** the most serious crimes such as online child sexual abuse, grooming and terrorist content
- The UK, US, Canada, Australia, New Zealand have been joined by India and Japan to ensure that all tech companies do not blind themselves to illegal activity on their platforms.
- Joining of India and Japan marks an expansion of the so-called **“Five Eyes” group of nations**.

End-to-End Encryption

- It is a process which ensures that the messages are visible only to the sender and the recipient, and not even to the tech company which is providing the platform.
- Tech companies have long argued that end-to-end encryption is necessary in order to protect people’s most private information. It keeps their messages **safe from criminals, hackers, and foreign interference**.

Five Eyes

- “Five Eyes” group of nations is a **global alliance on intelligence issues**. It was originally an **intelligence-sharing agreement between the United States and the UK** aimed at decrypting Soviet Russian intelligence during cold war era.
- By the late 1950s, **Canada, Australia, and New Zealand** had also joined the Alliance.
- The intelligence-sharing agreement between these five countries has only strengthened over time, as it has **extended to surveillance of online activity**.

Five Eyes and China

- In modern times, the alliance is transforming itself to be used for both economic as well as strategic purposes.
- Five Eyes alliance want to end **Western reliance on China**. The intelligence partners want to form a deeper relationship with each other to **create trusted supply chains**.

35. Recently, Indian Army has launched a mobile application called SAI. The app acts as

- a) **A platform to provide details about the surrounding terrain**
- b) **A secure messaging platform**
- c) **A platform to provide online training about new weapons**
- d) **A platform to provide weather information**

Answer – B

Explanation

- The Indian Army has launched a messaging app called **SAI (Secure Application for Internet)** that will provide **secure voice, text and video calling services to its soldiers**. It will facilitate secure messaging within the service.

- It is similar to commercially available messaging applications like WhatsApp, Telegram, SAMVAD and GIMS and utilises **end-to-end encryption messaging protocol**
- It was **developed by Colonel Sai Shankar**, the commanding officer of a signals unit in Rajasthan, and then upgraded to military-grade standards.

36. Consider the following pairs:

Name	Nature
1. SMART Missile -	Anti-Submarine Torpedo
2. Rustom-2 -	Anti-Radiation Missile
3. RUDRAM -	Drone

Which of the above pairs is/are correctly matched?

- a) 1 Only
- b) 1 and 2 only
- c) 2 and 3 Only
- d) 2 Only

Answer – A

Explanation

RUDRAM

- DRDO successfully tested the new-generation **anti-radiation missile, called RUDRAM**. It is the **first indigenous anti-radiation missile** of the country.
- The missile is a potent weapon for IAF for suppression of enemy air defence effectively from large stand-off ranges.. It does so by taking out radars, communication sites, and other radio frequency emitting targets, thereby foiling any plans to launch surface-to-air missiles.
- The missile is **integrated on SU-30 MKI fighter aircraft** as the launch platform, having capability of varying ranges based on launch conditions. It has **INS-GPS navigation with Passive Homing Head** for the final attack. The RUDRAM hit the radiation target with **pin-point accuracy**.
- The **Passive Homing Head** can detect, classify and engage targets over a wide band of frequencies as programmed.
- With this, the country has established indigenous capability to develop long range air launched anti-radiation missiles for neutralising enemy radars, communication sites and other RF emitting targets.
- Currently, the IAF uses **Russian-origin Kh-31 R anti-radiation missiles**. Other anti-radiation missiles are ground-based.

RUSTOM-2

- DRDO has flight tested the **Rustom-2 medium altitude long endurance indigenous drone**.
- Rustom-2 surveillance drone is expected to match the specifications of the **Israeli Heron unmanned aerial vehicle** currently used by the Indian Air Force and Navy.
- The push to Rustom-2 program was given after the Chinese Army tried to occupy Indian territory in Ladakh on the basis of a 1959 cartographical claim on the LAC.
- The PLA has **Wing Loong II armed drones** in its arsenal and has even given four of them to Pakistan to protect the CPEC corridor and Gwadar port.

- Until Rustom-2 is ready to be inducted, India is negotiating with Israeli to not only upgrade the **existing fleet of Heron drone** but also **arm them with air to surface missile and laser guided bombs**.
- India has also decided to go in for **American MQ 9B armed drone** instead of **Sea Guardian surveillance drone**.

SMART

- India successfully flight-tested the **Supersonic Missile Assisted Release of Torpedo (SMART)** from Wheeler Island off the coast of Odisha.
- SMART is a missile assisted release of lightweight Anti-Submarine Torpedo System for anti-submarine warfare operations for far beyond torpedo range.

38. Consider the following pairs:

Name of Exercise	Participating Countries
1. Bongosagar -	India - Bangladesh
2. Sagar Kavach -	India – Sri Lanka
3. Matla Abhiyan Exercise -	India - Indonesia

Which of the above pair(s) is/are NOT Correctly matched?

- a) **1 and 2 Only**
- b) **2 and 3 Only**
- c) **1 and 3 Only**
- d) **1, 2 and 3**

Answer – B

Explanation

Bongosagar Exercise

- The **second edition** of the bilateral naval exercise Bongosagar was held between **India and Bangladesh** in Northern Bay of Bengal. The first edition of the Exercise Bongosagar, was held in 2019.
- Ships from both navies participated in surface warfare drills, seamanship evolutions and helicopter operations. Indian Naval Ship (INS) included are:
 - **INS Kiltan:** an indigenously built Anti-Submarine Warfare Corvette
 - **INS Khukri:** an indigenously built Guided-Missile Corvette
- The exercise was aimed at developing interoperability and joint operational skills through conduct of maritime exercises and operations.
- Bongosagar was followed by the **third edition of India Bangladesh Coordinated Patrol (CORPAT)**, wherein both countries carried out joint patrolling along the International Maritime Boundary Line.

Sagar Kavach

- Sagar Kavach is a **coastal security exercise** conducted by **Indian Navy along with Indian Coastal Guard**.
- It is a **half-yearly exercise** to check coastal security mechanism and validate Standard Operating Procedure.
- This year's exercise was conducted along the coastal areas of Karnataka, Kerala and Lakshadweep.

Matla Abhiyan Exercise

- The Matla Abhiyan Exercise is a five-day **coastal security exercise** conducted by the **Indian Navy in Matla river**. The river forms a wide estuary in and around the Sunderbans.
- The exercise was conducted in Sunderbans region in order to create awareness about the coastal security to the local community.
- Under this exercise, two naval boats were flagged off to move along the river Matla in the Sunderbans up to Hemnagar (at Hemnagara a customs checkpost exists).

Purpose

- The purpose is to **interact with the local community, spread awareness** on coastal security and understand the navigational complexities in the Sunderbans Delta.
- Once a proper route is charted, it will allow the Navy to carry out patrols of its own if some input comes in.
- Security in the Sunderbans is otherwise the **responsibility of BSF**.

Why This Route

- This is an **international trade protocol route** between India and Bangladesh. The Navy has always been apprehensive of barges moving nearly unchecked along this route where contraband as well as men and deadly equipment can be dropped off easily.
- An expert boatman can move away from his given course and stop at any of the numerous villages dotting the landscape to drop off men and equipment.

39. Recently Mars Opposition phenomenon was observed. Consider the following sentences about Opposition (in terms of celestial bodies)

- 1. Opposition is the event when the Sun, Earth and an outer planet (Mars in the present case) are lined up, with Mars in the middle.**
- 2. Opposition can happen for both planets that are farther away from the sun than the Earth and close to Sun than Earth.**
- 3. It is called opposition as from an individual's perspective on the Earth, Mars rises in the west and sets in the east opposite to the Sun.**

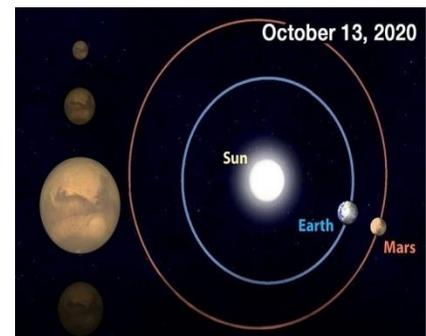
Which of the above sentences is/are incorrect?

- a) 1 and 2 only**
- b) 1 and 3 only**
- c) 2 and 3 only**
- d) 1, 2 and 3**

Answer: D

Explanation

- Due to an **event referred to as “opposition”**, which takes place **every two years and two months**, Mars will outshine Jupiter, becoming the **third brightest object (Moon and Venus are first and second, respectively)** in the night sky during the month of October.
- This year, while Mars' closest approach to Earth was on October 6, the opposition happened on October 13, which gave the planet its **“biggest, apparent size of the 2020s”**.



- **Opposition** is the event when the **Sun, Earth and an outer planet (Mars in this case)** are lined up, with the **Earth in the middle**.
 - The **time of opposition** is the point when the outer planet is typically also at its closest distance to the Earth for a given year, and because it is close, the planet appears brighter in the sky.
 - An opposition **can occur anywhere along Mars' orbit**, but when it happens when the planet is also closest to the sun, it is also particularly close to the Earth.
 - It is **called opposition** as from an individual's perspective on the Earth, Mars rises in the east and after **staying up all night**, it sets in the west just as the sun rises in the east and sets in the west i.e. the sun and Mars appear to be on the **opposite sides of the sky**. Essentially, opposition is a reference to "**opposing the sun**" in the sky.
- Opposition can **happen only for planets that are farther away** from the sun than the Earth. In the case of **Mars**, roughly **every two years**, the Earth passes between the Sun and Mars, this is when the three are arranged in a straight line.
- Significantly, the closest distance is relative and hence can vary. Mars made its closest approach to Earth in 2003 in nearly 60,000 years and it won't be that close to the planet until 2287. This is because the **orbits** of Earth and Mars are **not perfectly circular** and their shapes can change slightly because of gravitational tugging by other planets. For instance, Jupiter influences the orbit of Mars.

40. Raychaudhuri Equation recently seen in news is related to

- a) General Relativity
- b) Calculation of Earth Overshoot Day
- c) Subatomic Particle
- d) COVID-19 in the calculation of R nought number

Answer: A

Explanation:

- British physicist **Dr Roger Penrose** was awarded half the **Nobel Prize in Physics** this year. But only a handful know that his work stands on the shoulders of **Kolkata-born physicist Amal Kumar Raychaudhuri**.
- The **Raychaudhuri Equation** or **Landau–Raychaudhuri equation**, a fundamental result in **general relativity**, describes **how nearby bits of matter move**.
- It was **discovered** independently by **Raychaudhuri** and **Soviet physicist Lev Landau** as a simple, general validation of our expectation that gravitation is a universal force that attracts objects with mass and energy according to the General Relativity theory (and Newton's theory of gravitation).
- Raychaudhuri had worked on the equation in the early 1950s and the equation was the building block on which the **Penrose-Hawking singularity theorems** published in 1969 were based. Both Penrose and Hawking have acknowledged Raychaudhuri's contribution on numerous occasions in published papers and books.
- The Raychaudhuri Equation continues to be a key tool in investigating the behaviour of black hole horizons in modern physics.

41. Consider the following statements regarding Shaurya Missile

1. India conducted the successful trial of the nuclear-capable Shaurya missile.
2. Shaurya is a land variant of long-range Submarine Launched Ballistic Missiles (SLBMs) K-15 Sagarika.
3. The K family of missiles are primarily Submarine Launched Ballistic Missiles (SLBMs).

Which of the following sentences is/are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Answer: C

Explanation

- India conducted the successful trial of the **nuclear capable Shaurya missile**.
- Shaurya is a **land variant of short-range Submarine Launched Ballistic Missiles (SLBMs) K-15 Sagarika**, which has a range of at least 750 kilometres. These ballistic weapons belong to the **K missile family** — codenamed after late Dr APJ Abdul Kalam.
- Shaurya, like many of the modern missiles, is a **canister-based system**, which means that it is stored and operated from specially designed compartments. In the canister, the inside environment is controlled thus along with making its transport and storage easier, the shelf life of weapons also improves significantly.
- India has also developed and successfully tested multiple times the K-4 missiles from the family which has a range of 3500 km. The early development trials of K-15 and K-4 missiles had begun in the early 2010s.

The K Family of missiles

- The K family of missiles are primarily **Submarine Launched Ballistic Missiles (SLBMs)**, launched from the **Arihant class** of nuclear submarines. They have been indigenously developed by **Defence Research and Development Organisation (DRDO)**.
- The development of these naval platform launched missiles began in the late 1990s as a step towards completing **India's nuclear triad** — the capability of launching nuclear weapons from land, sea and air-based assets.
- Because these missiles are to be launched from submarines, they are **lighter, smaller and stealthier than their land-based counterparts**, the Agni series of missiles which are medium and intercontinental range nuclear capable ballistic missiles.

Strategic Importance of SLBMs

- The capability of being able to launch nuclear weapons submarine platforms has great strategic importance in context of **achieving a nuclear triad**, especially in the light of **'no first use' policy of India**.
- The sea-based underwater nuclear capable assets significantly **increase the second-strike capability of a country** and thus boosts its nuclear deterrence. These submarines can not only survive a first strike by the adversary but also can launch a strike in retaliation thus **achieving Credible Nuclear Deterrence**.

42. Consider the following sentences about Asteroid Benu

1. Benu is a **B-type asteroid**, implying that it contains significant amounts of Iron and various other minerals.
2. The asteroid reflects about 4% of the light that hits it, which is very low when compared with a planet like Venus, which reflects about 65% of the light that hits it.

Which of the above sentences is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 not 2

Answer: B

Explanation:

- NASA's **OSIRIS-REx** spacecraft briefly touched asteroid Benu, from where it is meant to **collect samples of dust and pebbles** and deliver them back to earth in 2023.
- OSIRIS-REx mission is NASA's first mission meant to **return a sample from the ancient asteroid**. The mission is essentially a **seven-year-long voyage** and will conclude when at least 60 grams of samples are delivered back to the Earth.
- The mission was **launched in 2016**, it reached its target in 2018 and since then, the spacecraft has been trying to match the velocity of the asteroid using small rocket thrusters to rendezvous it. It also utilised this time to survey the surface and identify potential sites to take samples.
- The spacecraft's robotic arm, called the **Touch-And-Go Sample Acquisition Mechanism (TAGSAM)**, made an attempt to "TAG" the asteroid at a sample site and collected a sample.

Importance of Studying Asteroid Benu

- Benu is an asteroid located at a distance of about 200 million miles away from the Earth.
- Benu is a **B-type asteroid**, implying that it **contains significant amounts of carbon** and various other minerals. Because of its high carbon content, the **asteroid reflects about 4% of the light** that hits it, which is very low when compared with a planet like Venus, which reflects about 65% of the light that hits it. Earth reflects about 30%.
- Around **20-40% of Benu's interior is empty space** and scientists believe that it was formed in the first 10 million years of the solar system's formation, implying that it is roughly **4.5 billion years old**.
- There is a slight possibility that Benu, which is **classified as a Near Earth Object (NEO)**, might strike the Earth in the next century, between the years 2175 and 2199.
- Scientists study asteroids to look for information about the **formation and history of planets and the sun** since asteroids were formed at the same time as other objects in the solar system. Another reason for tracking them is to **look for asteroids that might be potentially hazardous**.

Asteroids

- Asteroids are **rocky objects that orbit the Sun**, much smaller than planets. They are also called minor planets.
- Asteroids are divided into three classes:
 - First, those **found in the main asteroid belt between Mars and Jupiter**, which is estimated to contain somewhere between 1.1-1.9 million asteroids.

- The second group is that of **trojans**, which are asteroids that share an orbit with a larger planet. NASA reports the presence of Jupiter, Neptune and Mars trojans. In 2011, they **reported an Earth trojan** as well.
- The third classification is **Near-Earth Asteroids (NEA)**, which have orbits that pass close to the Earth. Those that cross the Earth's orbit are called Earth-crossers.

43. Consider the following sentences about Artemis programme

1. It is a programme of NASA' which plans to send the first woman and the next man to Mars in 2024.
2. It also aims to establish a "sustainable human presence" there by the end of the decade.

Which of the above sentences is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: B

Explanation

Water On Moon

- In two separate studies, scientists have reported water discovery on the Moon. In one study, **NASA's Stratospheric Observatory for Infrared Astronomy (SOFIA)** has confirmed, **for the first time, water on the sunlit surface of the Moon**. The other estimates that the Moon's dark, shadowy regions, potentially contain ice.
- This time, it **confirmed H₂O molecules**, discovered in **Clavius Crater in the Moon's southern hemisphere**. The discovery of water on the sunlit side shows water may be distributed across the lunar surface, and not limited to cold, shadowed places
- Previous Moon studies, including Indian Space Research Organisation's (ISRO) Chandrayaan-1 mission, have provided evidence for the existence of water. However, what was not established in such studies was whether the detected molecules were water as we know it (H₂O) or in the form of hydroxyl (OH).
- The water could have formed when space rocks carrying small amounts of water bombarded the Moon. Alternatively, the Sun's solar wind could have carried hydrogen, which then reacted with minerals in the lunar soil to create hydroxyl, which later transformed into water.
- **Importance Of This Discovery**
 - Apart from being a marker of potential life, water is a **precious resource in deep space**. For astronauts landing on the Moon, water is **necessary not only to sustain life** but also for purposes such as **generating rocket fuel**.
 - If space explorers can use the Moon's resources, it means they need to **carry less water from Earth**.

Missions Looking For Signs Of Habitability On The Moon And Other Worlds

A. SOFIA

- SOFIA, an airborne observatory, is part of a joint project between **NASA and the German Aerospace Centre**. SOFIA is a Boeing 747SP aircraft modified to carry a 2.7-meter reflecting telescope.
- SOFIA's mission is to **look at dark and distant objects**. This was, in fact, the first time that SOFIA looked at the Moon for observations.

B. VIPER

- **Volatiles Investigating Polar Exploration Rover (VIPER)** is a lunar rover slated to reach the Moon's surface in late 2023.
- This mobile robot is expected to land at the Moon's South Pole, where it will **search for water ice and other potential resources**.
- VIPER will carry out a mission to create the **first water resource maps of the Moon**.

C. Europa Clipper

- Europa is the **smallest of four moons that orbit Jupiter** and has a completely icy surface. But scientists believe that beneath its surface, Europa holds a saltwater ocean thought to contain about twice as much water as Earth's global ocean.
- Europa Clipper orbiter will conduct a **detailed survey of Europa by making about 45 close passes over it**. With each flyby, the spacecraft will change its flightpath to eventually survey the entire moon.
- The orbiter will also be equipped with an infrared instrument to **measure surface temperatures** and a **dust analyzer** to study the tiny fragments of Europa that are "blasted off" the surface by micrometeorites.

D. Artemis programme

NASA's Artemis programme plans to **send the first woman and the next man to the Moon in 2024**, and aims to **establish a "sustainable human presence" there by the end of the decade**.

44. Which of the following can best define the NAG Missile

- a) **Anti-Tank Guided Missile (ATGM)**
- b) **Medium-range Surface-to-Air Missile**
- c) **Long-range Surface-to-Surface Missile**
- d) **Surface-to-Surface Short-range Ballistic Missiles**

Answer: A

Explanation:

- The final user trial of **3rd generation Anti-Tank Guided Missile (ATGM) NAG** was carried out from Pokhran range in Rajasthan. ATGM NAG has been **developed by DRDO**.
- The missile was launched from the **NAG Missile Carrier (NAMICA)**, a modified BMP infantry combat vehicle with amphibious capability, which is capable of carrying up to six combat missiles.
- The Nag Missile system fired from NAMICA can **take out targets at ranges of 4 to 7 kilometres** and is fitted with an advanced seeker to home on to its target. The **imaging algorithm used** with the system helps the projectile hit the target at four-kilometer distance day and night even in all-weather conditions, making it fit for deployment across India's frontiers in both eastern and western theatre.

- The missile has “**Fire & Forget**” “**Top Attack**” capabilities with passive homing guidance to defeat all Main Battle Tanks (MBTs) equipped with composite and reactive armour. It can effectively engage and destroy all known enemy tanks during day and night.
- With this final user trial, NAG will enter into the production phase. The missile will be **produced by Defence PSU Bharat Dynamics Limited (BDL)**, whereas **Ordnance Factory Medak will produce the NAMICA**.
- The Defence Ministry in 2018 had cleared the acquisition of 300 Nag missiles and 25 NAMICAs for the Indian Army.

Anti-Tank Guided Missile (ATGM)

- **Anti-Tank Guided Missiles (ATGMs)** are the missile systems that **can strike and neutralise armoured vehicles** such as tanks.
- The **Defence Research and Development Organisation (DRDO)** has been working on ATGMs that can be launched from different platforms as part of the **Integrated Guided Missile Development Programme**.
- The indigenously developed low weight, fire and forget **Man Portable Anti-Tank Guided Missile (MPATGM)** was successfully tested in September 2019.
- The **laser-guided ATGM** was also successfully tested recently and it mainly differs in one aspect from other ATGMs developed till date. This ATGM is **designed to be fired from tanks**. With its range limited to 1.5 to 5 kilometers, it locks and tracks the targets with the help of laser designation to ensure precision in striking the target.
- The missile uses a ‘tandem’ **High Explosive Anti-Tank (HEAT)** warhead.
 - The term **tandem refers to the missiles using more than one detonation** in order to effectively penetrate the protective armours.
 - This missile has the capacity of piercing armoured vehicles which use specially designed armour plates to counter the impact of such projectiles.
- The missile has the **capability of engaging with the target even if it is not in the line of sight**, thus further enhancing its capability.

45. Consider the following statements on Polio

1. Polio is a disabling and life-threatening disease caused by the bacteria.
2. Recently, India was declared polio-free in January 2019, after three years of zero cases.
3. As per the WHO, since 1980, the cases of wild poliovirus have decreased by over 99.9% as a result of vaccination efforts made around the world.

Which of the above sentences is/are incorrect?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Answer: A

Explanation

- **October 24** is observed as **World Polio Day** every year in order to call on countries to stay vigilant in their fight against the disease. As per the WHO, since 1980, the cases of **wild poliovirus have decreased by over 99.9%** as a result of vaccination efforts made around the world.
- World Polio Day was established by **Rotary International** over a decade ago to commemorate the birth of **Jonas Salk**, who led the first team to develop the vaccine against the disease.
- In the last three decades, the **Global Polio Eradication Initiative (GPEI)**, led by national governments and the WHO, has been monitoring the disease situation globally.
- In 2019, polio outbreaks were recorded in the Philippines, Malaysia, Ghana, Myanmar, China, Cameroon, Indonesia and Iran, which were mostly vaccine-derived (a rare strain of the virus genetically mutated from the strain in the vaccine).
- As per the CDC, **Afghanistan and Pakistan** are the two countries that are the last stronghold of the wild poliovirus.
- **India was declared polio-free in January 2014**, after three years of zero cases. The last case due to wild poliovirus in the country was detected in January, 2011.

Polio

- Polio is a crippling and potentially deadly disease that affects **the nervous system**. Most people with polio do not feel sick and have only minor symptoms. In rare cases, polio infection causes **permanent loss of muscle function** (paralysis). Polio can be fatal if the muscles used for breathing are paralyzed or if there is an infection of the brain.
- There are three variants of the poliovirus, numbered 1 to 3. For a country to be declared polio-free, the wild transmission of all three kinds has to be stopped. For eradication, cases of both wild and vaccine-derived polio infection have to be reduced to zero.
- Polio infection, however, can be easily prevented by a vaccine. There are two types of vaccine that can prevent polio:
 - **Inactivated poliovirus vaccine (IPV)** given as an injection in the leg or arm, depending on the patient's age.
 - **Oral poliovirus vaccine (OPV)** is still used throughout much of the world.

46. Oaxaca is located in?

- a) Cuba
- b) China
- c) Mexico
- d) Egypt

Answer: C

Explanation

- In his recent Mann ki baat address, the PM made a reference to the region of Oaxaca (pronounced O-aa-ha-ka) in Mexico.
- He said khadi was being manufactured in Oaxaca, and narrated an anecdote about how khadi reached the Latin American country after a local resident became influenced by a film on Mahatma Gandhi.

- Khadi Oaxaca is a farm-to-garment collective which comprises around 400 families, which live and work on traditional farms and homesteads in the Oaxaca region of southern Mexico.
- The project uses cotton produced and cultivated on the Oaxaca coast, and produces chemical-free clothing, relying on locally harvested plant-based dyes.

47. Consider the following statements about Stockholm Convention

1. It is a global treaty to protect human health and the environment from persistent organic pollutants.
2. India ratified the Stockholm Convention in 2006

Which of the statements given above is/are correct?

- a) 1 Only
- b) 2 Only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: C

Explanation:

- Recently the Union Cabinet has approved the **ratification of seven chemicals listed under Stockholm Convention on Persistent Organic Pollutants (POPs)**.
- The Cabinet further delegated its powers to ratify chemicals under the Stockholm Convention to Union Ministers of External Affairs (MEA) and Environment, Forest and Climate Change (MEFCC) in respect of POPs already regulated under the domestic regulations thereby streamlining the procedure.
- MoEFCC had notified the '**Regulation of Persistent Organic Pollutants Rules**, on March 5, 2018 under the provisions of **Environment (Protection) Act, 1986**. The regulation inter alia prohibited the manufacture, trade, use, import and export of **seven chemicals** namely (i) Chlordecone, (ii) Hexabromobiphenyl, (iii) Hexabromodiphenyl ether and Heptabromodiphenylether (Commercial octa-BDE), (iv) Tetrabromodiphenyl ether and Pentabromodiphenyl ether (Commercial penta-BDE), (v) Pentachlorobenzene, (vi) Hexabromocyclododecane, and (vii) Hexachlorobutadiene, which were already listed as POPs under Stockholm Convention.

About Stockholm Convention

- The Stockholm Convention is a **legally binding global treaty to protect human health and environment from Persistent Organic Pollutants (POPs)**, which are identified chemical substances that persist in the environment, **bio-accumulate in living organisms**, adversely affect human health/ environment and have the property of long-range environmental transport (LRET).
- Exposure to POPs can lead to **cancer, damage to central & peripheral nervous systems, diseases of immune system**, reproductive disorders and interference with normal infant and child development.
- POPs are listed in various Annexes to the Stockholm Convention after thorough scientific research, deliberations and negotiations among member countries. The Convention **require each party to prohibit and/or eliminate the production and use, as well as the import and export, of the intentionally produced POPs** that are listed in various Annexes.
- **India had ratified the Stockholm Convention** on January 13, 2006.

48. Sambhar Lake- India's largest inland saline water body recently in news is located in which of the following state?

- a) Odisha
- b) Arunachal Pradesh
- c) Rajasthan
- d) None of the above

Answer: C

Explanation:

- The Rajasthan government is planning to **build temporary shelters for migratory birds near the Sambhar Lake**, when a large number of avian guests from the cold northern regions of Central Asia are expected to arrive at the country's largest inland saline water body.
- **More than 20,000 migratory birds had died due to avian botulism** in the lake last year. The Rajasthan High Court, which took suo motu cognisance of the mass death, has also constituted a seven-member expert committee to study the impact of salt forming and identify any illegal salt mining in the lake.

About Avian Botulism

- **Botulinum** is a natural toxin produced by a bacteria known as **Clostridium botulin**. It produces the toxin when it starts reproducing.
- The bacteria is **commonly found in the soil, river, and sea water**. There are around eight types — A, B, C1, C2, D, E, F, and G — of botulinum toxin and they are distinguishable when diagnosed. But **all types of toxins attack the neurons, which leads to muscle paralysis**.
- Botulinum **affects both humans and animals** but the type of the toxin varies — botulinum C in birds and A, B and E in humans. The toxin has been recognised as a **major cause of mortality in wild birds since the 1900s**.

49. State of Global Air 2020 report, recently in news, was released by which among the following?

- a) Ministry of Environment, Forest and Climate Change
- b) Health Effects Institute
- c) International Union of Air Pollution Prevention and Environmental Protection
- d) None of the above

Answer: B

Explanation

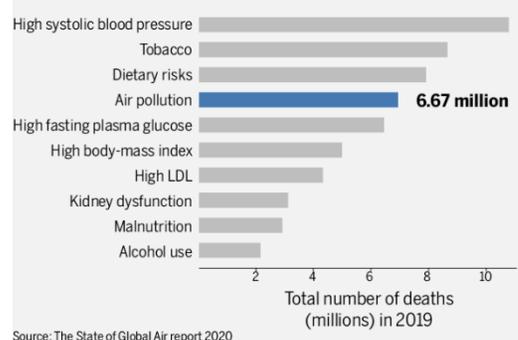
Health Effects Institute (HEI1), an independent, nonprofit research institute funded jointly by the U.S. Environmental Protection Agency and others has released the **State of Global Air 2020 report**. It uses both data from ground monitors and satellite to make their assessments.

Highlights Of The Report

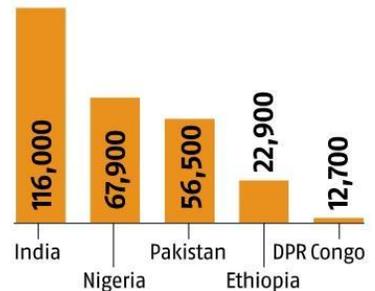
- **India recorded the highest annual average PM 2.5 concentration exposure in the world** last year. India was followed by Nepal, Niger, Qatar and Nigeria in high PM 2.5 exposures.

- **India has been recording an increase in PM 2.5 pollution since 2010** contrary to Centre’s claims that annual air pollution levels in the country are coming down. Out of the 20 most populous countries, 14 have recorded a gradual improvement in air quality but India, Bangladesh, Niger, Pakistan and Japan are among those that have recorded a modest increase in air pollution levels.
- Out of 87 health risk factors based on total number of deaths caused in 2019 assessed by the team, **air pollution has the fourth highest risk globally preceded by high systolic blood pressure, tobacco and dietary risks.**
- **But in India, air pollution is the highest risk factor** because of the huge burden of premature deaths it contributes to. **High particulate matter contributed to the deaths of more than 116,000 Indian infants** who did not survive their first month.
- **India is among the top ten countries with highest ozone (O3) exposure in 2019.** Among the 20 most populous countries, India recorded the highest increase (17%) in O3 concentrations in the past ten years. On average, **global exposure to ozone increased from about 47.3 parts per billion (ppb) in 2010 to 49.5 ppb in 2019.**

Total number of deaths from all causes in 2019



Air pollution: Infant killer (2019)



50. Shivalik Elephant Reserve, recently in news, is located in which among the following states?

- Himachal Pradesh
- Haryana
- Uttarakhand
- Uttar Pradesh

Answer: C

Explanation:

- The Ministry of Environment, Forest and Climate Change (MoEF) has asked the Uttarakhand government to consider **avoiding sensitive areas of Shivalik Elephant Reserve** while exploring land suitable to use for **expansion of Dehradun’s Jolly Grant Airport**. This observation in response to a Uttarakhand government proposal for the diversion of 87 hectare (ha) of forest land in Dehradun district for the expansion of the airport.
- The proposal sent to the MoEF itself says that **the area is a part of the Shivalik Elephant Reserve and it falls within a 10-km radius of Rajaji National Park**. Thus there is regular movement of wild animals, especially elephants, from one area to another, leading to man-animal conflict affecting humans as well as wild animals.
- Thus, to mitigate the conflict, Dehradun forest division is proposing a wildlife mitigation plan which includes **construction of elephant proof wall, solar fencing, weed eradication, construction of water holes**, purchase of tranquilizing gun and other rescue equipments.
- Shivalik elephant reserve constitutes three protected areas, Jim Corbett National Park , Rajaji National Park and Sona-nadi Wildlife Sanctuary apart from other forest divisions.

Narco And Polygraph Tests

Uttar Pradesh state government has ordered that all those connected with **Hathras gang rape case** will have to undergo polygraph and narco analysis tests as part of the investigation.

What Are Polygraph And Narcoanalysis Tests?

Polygraph Test

- A polygraph test is based on the assumption that **physiological responses** that are triggered when a person is lying are different from what they would be otherwise.
- Instruments like cardio-cuffs or sensitive electrodes are attached to the person, and variables such as blood pressure, pulse, respiration, change in sweat gland activity, blood flow, etc., are measured as questions are put to them. **A numerical value is assigned to each response** to conclude whether the person is telling the truth, is deceiving, or is uncertain.
- A test such as this is said to have been **first done in the 19th century by the Italian criminologist Cesare Lombroso**, who used a machine to measure changes in the blood pressure of criminal suspects during interrogation.

Narcoanalysis

- Narcoanalysis, by contrast, involves the **injection of a drug, sodium pentothal, which induces a hypnotic or sedated state** in which the subject's imagination is neutralised, and they are expected to divulge information that is true.
- The drug, referred to as "truth serum" in this context, was used in larger doses as anaesthesia during surgery, and is said to have been used during World War II for intelligence operations.
- **The entire test takes 1 to 3 hours.** The person who undergoes the narco test regains consciousness fifteen minutes after the medication is stopped.
- More recently, investigating agencies have sought to employ these tests in investigation, and are sometimes seen as being a "softer alternative" to torture or "third degree" to extract the truth from suspects.
- However, **neither method has been proven scientifically to have a 100% success rate**, and remain contentious in the medical field as well.

Supreme Court's Decision in Selvi vs State of Karnataka

- In '**Selvi & Ors vs State of Karnataka & Anr**' (2010), Supreme Court ruled that no lie detector tests should be administered "**except on the basis of consent of the accused**". Those who volunteer must have access to a lawyer, and have the physical, emotional, and legal implications of the test explained to them by police and the lawyer.
- It said that the 'Guidelines for the Administration of Polygraph Test on an Accused' published by the National Human Rights Commission in 2000, must be strictly followed. **The subject's consent should be recorded before a judicial magistrate.**
- The **results of the tests cannot be considered to be "confessions"**, because those in a drugged-induced state cannot exercise a choice in answering questions that are put to them. However, any information or material subsequently discovered with the help of such a voluntarily-taken test can be admitted as evidence.
- The Bench took into consideration international norms on human rights, the right to a fair trial, and the **right against self-incrimination under Article 20(3) of the Constitution.** A forcible intrusion into a person's mental processes is also an affront to human dignity and liberty, often with grave and long-lasting consequences.

- Observing the state's plea that the use of such scientific techniques would reduce 'third degree' methods "is a circular line of reasoning since **one form of improper behaviour is sought to be replaced by another**".
- With reference to victims, especially of sexual offences, the Bench said that irrespective of the need to expedite the probe in such cases, **a victim of an offence cannot be forced to undergo these tests** as it would be "an unjustified intrusion into mental privacy and could lead to further stigma for the victim".

Recent Criminal Cases Where These Tests Have Been Used

- In most cases, **investigating agencies seek permission for such tests to be done on accused or suspects**, but rarely on victims or witnesses. Legal experts say that investigating agencies can submit to a court that the tests are being sought to help in their probe but **consent or refusal to undergo the tests by an individual do not reflect innocence or guilt**.
- Most recently, the CBI has sought to conduct these tests on the driver and helper of the truck that hit the **Unnao rape victim in Uttar Pradesh** in July last year. It also sought to conduct the tests on one accused in the **Punjab National Bank alleged fraud case**, but the court rejected the plea after the accused did not give consent.

Target Rating Point (TRP)

Days after Mumbai Police investigations pointing at a **possible tampering of TRP by certain news channels**, television rating agency **Broadcast Audience Research Council (BARC)** announced the suspension of audience estimates and ratings for news channels for the next three months.

What Is A TRP And How Is It Calculated?

- In simple terms, TRPs represent **how many people, from which socio-economic categories, watched which channels for how much time during a particular period**. This could be for an hour, a day, or even a week; India follows the international standard of one minute. The data is usually made public every week.
- In India, the TRP is recorded by the BARC using **Bar-O-Meters** that are installed in televisions in selected households. As on date, the BARC has installed these meters in **44,000 households across the country**.
- **Audio watermarks are embedded in video content prior to broadcast**. These watermarks are not audible to the human ear, but can easily be detected and decoded using dedicated hardware and software. As viewing details are recorded by the Bar-O-Meters, so are the watermarks.

Significance of TRP

- On the basis of audience measurement data, ratings are assigned to various programmes on television. **Television ratings in turn influence programmes produced for the viewers**. Better ratings would promote a programme while poor ratings will discourage a programme.
- Incorrect ratings will lead to production of programmes which may not be really popular while good programmes may be left out.
- A FICCI-EY report on India's media and entertainment industry for last year said the **size of the TV industry was Rs 78,700 crore last year**, and TRPs are the main currency for advertisers to decide which channel to advertise on by calculating the cost-per-rating-point (CPRP).

Loopholes In The Process

- The Mumbai police claimed that **households were being paid to manipulate the TRP**. If broadcasters can find the households where devices are installed, they can either bribe them to watch

their channels, or ask cable operators or multi-system operators to ensure their **channel is available as the “landing page” when the TV is switched on.**

- For TRPs, it does not matter what the entire country is watching, but essentially what the 45,000-odd households supposed to represent TV viewership of the country have watched. Broadcasters can target these households to fudge actual viewership data.
- One of the biggest challenges has been the **absence of any specific law through which the agents/ suspects involved in panel tampering/infiltration could be penalized.**
- Many analysts also point to the fact that in current system **BARC has monopoly and there is no alternative.** it does not reveal how they arrive at the viewership figures, methodology they apply and the area of survey.
- In 2018, the I&B Ministry had raised concerns that **BARC was under-reporting viewership of Doordarshan,** and floated the idea of chip-based activity logs through all set-top boxes. The idea was finally rejected.

Broadcast Audience Research Council (BARC)

- It is an industry body **jointly owned by advertisers, ad agencies, and broadcasting companies,** represented by The Indian Society of Advertisers, the Indian Broadcasting Foundation and the Advertising Agencies Association of India.
- Though it was created in 2010, the I&B Ministry notified the Policy Guidelines for Television Rating Agencies in India on January 10, 2014 and registered BARC in July 2015 under these guidelines, to carry out television ratings in India.
- It **does not work under Ministry of I&B.** The **Ministry has accredited BARC** to carry out the television ratings.
- BARC India launched its services with 277 subscribed channels. Today, the number of channels that have adopted BARC India’s watermarking technology and are subscribed to its services has grown to 470+.

SVAMITVA Scheme

Prime Minister has launched the physical distribution of property cards under the ‘SVAMITVA’ (ownership) scheme via video conferencing.

About SVAMITVA Scheme

- SVAMITVA (Survey of Villages And Mapping With Improvised Technology in Village Areas) is a **Central Sector Scheme of Ministry of Panchayati Raj,** which was launched by the Prime Minister on National Panchayati Raj Day, 24th April 2020.
- It aims to provide rural people with the **right to document their residential properties** so that they can use their property for economic purposes. The scheme is for **surveying the land parcels in rural inhabited area using Drone technology.** The survey shall be done across the country in a phase wise manner **over the period of four years (2020 -2024).**
- **Coverage:** There are about **6.62 lakh villages in the country** which will be eventually covered in this scheme.
- **Objectives**
 - **To bring financial stability** to the citizens in rural India by enabling them to use their property as a financial asset for taking loans and other financial benefits.
 - **Creation of accurate land records** for rural planning.
 - **Determination of property tax,** which would accrue to the GPs directly in States where it is devolved or else, add to the State exchequer.

- **Creation of survey infrastructure** and GIS maps that can be leveraged by any department for their use.
- **To support in preparation of better-quality Gram Panchayat Development Plan (GPDP)** by making use of GIS maps.
- **To reduce property related disputes** and legal cases.

Tech For Tribals

The Ministry of Tribal Affairs has launched Tech For Tribals initiative that focuses on imparting **entrepreneurship and business skills to tribals in Chhattisgarh**. It was launched in association with Chhattisgarh MFP Federation and IIT Kanpur.

Features Of The Initiative

- The programme aims to **tap the traditional knowledge and skills of tribals** and **add branding, packaging and marketing skills** to optimise their income through a market-led enterprise model by setting up **Van Dhan Kendras**.
- Under the programme, tribal beneficiaries across all districts of Chhattisgarh will be trained in various facets of micro-enterprise creation, management and functioning.
- **The training module has been developed by IIT, Kanpur** and will be disseminated among beneficiaries in a phased manner through various modes like online lectures and training, online activities and face-to-face interactions in classrooms etc.
- This program will mainly entail three aspects of development for sustainable entrepreneurship which can be considered as the three pillars - **Engagement, Capacity Building, and Market linkages**. This will lead to the path of commercialization of the tribal entrepreneurs.

Star Campaigner

- Recently the **Election Commission (EC)** **revoked the star campaigner status** of a Congress leader after his remarks on a woman candidate in Madhya Pradesh Assembly bypolls.
- However, the Supreme Court stayed the EC's order observing **the poll body "has no power" to decide who is a star campaigner**.

Who Is A Star Campaigner?

- A star campaigner is a **celebrity vote seeker in an election** for a party. This person can be a politician, film star etc. There is **no law governing who can or cannot be made** a star campaigner.
- They are **nominated by the concerned political parties** specifying their constituencies and duration of the status.
- **A 'recognised' party** declared as such by the Election Commission -- can nominate a **maximum of 40 star campaigners**. An unrecognised political party can nominate a maximum of 20 star campaigners.
- Since political parties appoint star campaigners, the Election Commission has issued guidelines the **Model Code of Conduct regulating poll campaign by them**.

Why Political Parties Need A Star Campaigner?

- Political parties believe that **voters will get attracted by the star campaigners** and will vote to that particular party.
- However, it has a lot to do with **poll expenditure**. The Election Commission keeps a tab on expenditure incurred by individual candidates during campaign Rs 70 lakh for most states in one constituency by each candidate.

- **Expenditure incurred on electioneering by the star campaigner is not added to a candidate's poll expenditure** giving him/her more leeway. According to the Representation of People's Act, these expenses will be borne by the political parties.

Terms And Conditions

- For an individual candidate to get a relief from campaign expenditure, the star campaigner has to limit oneself to general campaigning for the party.
- If she/he shares stage with a candidate, the entire campaign cost except expenditure incurred on travelling will added to the candidate's election expenses. This applies even if the star campaigner seeks vote for the candidate taking his or her name.
- If more than one candidates share the stage with the star campaigner, the expenditure incurred on the rally will be shared equally by the contestants.
- If the candidates are not present but their posters or photographs have been displayed in their constituencies where a star campaigner holds a poll rally, the entire expense will be added to the election expenses of the contestants.

Prime Minister As The Star Campaigner

- The MCC guidelines say when a prime minister or a former prime minister is star campaigner, the **expenditure incurred on security including on the bullet-proof vehicles will be borne by the government** and will not be added to the election expenses of the party or the individual candidate.
- However, if another campaigner travels with the prime minister or a former minister, the individual candidate will have to bear 50 per cent of the expenditure incurred on the security arrangements.

Election Symbols

During Bihar Assembly Election 2020, Voters can expect to see a myriad of symbols like chapatti roller, dolli, bangles, capsicum on the ballots.

Significance Of Symbols In Elections

- In a vast and diverse country like India, where several nondescript and small political parties try out their luck in state elections, symbols are **crucial campaigning tools to connect with the voters**.
- Symbols have become a crucial part of the electoral process ever since India held its first national polls in 1951-52. Since **nearly 85 % of the electorate were illiterate** at that point, visual symbols were allotted to parties and candidates to help them identify the party of their choice.

Types Of Symbols

- As per the **Election Symbols (Reservation and Allotment) (Amendment) Order, 2017**, party symbols are either "**reserved**" or "**free**".
- While eight national parties and 64 state parties across the country have "reserved" symbols, the Election Commission also has a **pool of nearly 200 "free" symbols that are allotted to the thousands of unrecognised regional parties** that pop up before elections.
- According to EC, there are **2,538 unrecognised parties in India**. For example, if a party recognised in a particular state contests in elections in another state, it can "reserve" the symbol being used by it, provided the symbol is not being used or bears resemblance to that of any other party.

Allocation Of Symbols To Political Parties

- The order, first promulgated in 1968, mandates the Election Commission to provide for "specification, reservation, choice and allotment of symbols at parliamentary and assembly elections, for the recognition of political parties".

- As per the guidelines, to get a symbol allotted, a **party/candidate has to provide a list of three symbols from the EC's free symbols** list at the time of filing nomination papers. Among them, one symbol is allotted to the party/candidate on a first-come-first-serve basis.
- When a recognised political party splits, the Election Commission takes the decision on assigning the symbol.

Committee on Candidate Election Expenditure

Election Commission of India constituted a committee to **examine the issues concerning the expenditure limit on elections**. In view of the pandemic, the ECI has as a temporary measure- *already announced a 10 per cent increase for poll going states*.

The Expenditure Limit

- The expenditure limit is the amount an **election candidate can legally spend for his election campaign** and has to account for.
- **It was last revised in 2014** while the same was done for Andhra Pradesh and Telangana in 2018, following the bifurcation. These limits **range from Rs 20 lakh to Rs 28 lakh for assembly elections and from Rs 54 lakh to Rs 70 lakh for Lok Sabha elections**.
- In the last six years, the limit was not increased despite **increase in electorate from 834 million to 910 million in 2019 and 921 million as on date**. Further, Cost Inflation Index during this period has increased from 220 to 280 in 2019 to 301 now.
- Limits on campaign expenditure are meant to **provide a level-playing field for everyone contesting elections**. It ensures that a candidate can't win only because He/She is rich.
- **The 255th Report of the Law Commission on electoral** reforms argued that unregulated or under-regulated election financing could lead to "lobbying and capture, where a sort of quid pro quo transpires between big donors and political parties/candidates".

Ceiling Applicability

- The Election Commission (EC) imposes limits on campaign expenditure **incurred by a candidate, not political parties**.
- This includes money spent by a political party or a supporter towards the candidate's campaign. However, **expenses incurred either by a party or the leader of a party for propagating the party's programme are not covered**.
- Candidates must mandatorily file a true account of election expenses with the EC. An incorrect account, or expenditure beyond the ceiling can attract disqualification for up to three years under **Section 10A** of Representation of the People Act (RPA), 1951.

Capping Party Spends

- **The Law Commission was against identifying a ceiling for expenditure by parties**. The **255th Report on electoral reforms** said: "It is recommended that the law on this point does not change, namely that there are no caps on party expenditure under the RPA given that it would be very difficult to fix an actual, viable limit of such a cap and then implement such a cap."
- **EC View On Party Spends**
 - The EC has asked the government **to amend the RPA and Rule 90 of The Conduct of Elections Rules, 1961**, to introduce a ceiling on campaign expenditure by political parties in the Lok Sabha and Assembly polls.
 - It should be **either 50% of or not more than the expenditure ceiling limit** provided for the candidate multiplied by the number of candidates of the party contesting the election.

- The limit will ensure level **playing field for all political parties and curb the menace of unaccounted money in elections**. It will also control the money power used by political parties and their allies.

New Land Laws For Jammu And Kashmir

- The Ministry of Home Affairs (MHA) announced **several amendments to land laws** for the Union Territory of Jammu Kashmir (J&K), including the **Jammu and Kashmir Development Act of 1970**, which till now entitled **only permanent residents to purchase or sell property in the former State**, and the **J&K Land Revenue Act, 1996**.
- **MHA issued two orders:** Union Territory of Jammu and Kashmir Reorganisation (Adaptation of Central Laws) Third Order, 2020 and the Union Territory of Jammu and Kashmir Reorganisation (Adaptation of State Laws) Fifth Order, 2020. While the Third Order adapts central laws such as the Real Estate Act, the Fifth Order has brought sweeping changes to land laws by **repealing 12 state laws**.

New Amendments

- **Buying of land:** According to the amendment to the **Land Revenue Act**, anyone from any part of the country can now buy land in J&K, including agricultural land.
- **Prohibitions:** The amendments prohibit sale, transfer, mortgage and conversion of agricultural land to a non-agriculturist in the UT. However it can still be allowed, “provided that the Government or an officer authorized by it in this behalf may grant permission to an agriculturist to alienate the land to a non-agriculturist by way of sale, gift, exchange or mortgage”.
- **Transfer of agricultural land:** The government can allow the transfer of agricultural land to a public trust for charitable work, healthcare, education, industrial or commercial purposes.
- **A Board of Revenue** headed by a Financial Commissioner has been constituted and a fresh clause defining “agricultural land” as land which is used or is capable of being used for agriculture and allied activities, including fallow land, has been inserted.
- **Low cost housing:** The amendment **deletes** the “permanent resident” provision in the 1970 Act that provided housing sites within the range of 25-30 square metres to permanent residents belonging to “economically weaker section” and “low income groups”. Now, economically deprived people from all parts of the country will be eligible for such housing sites.
- **Declaration of “strategic area”:** The government, on the written request of an Army officer not below the rank of a Corps Commander, may declare an area as a “strategic area” for direct operational and training requirements of the armed forces.
- **Creation of Jammu and Kashmir Industrial Development Corporation** for establishing commercial centres and industries in the UT.
 - The Corporation shall consist of twelve directors, four of whom could be nominated from the private sector with experience in “industry or trade or finance”.
 - The Corporation will have the **power to acquire movable and immovable property**, and to lease, sell, exchange or transfer any property held by it.
 - If the Corporation is unable to acquire land by an agreement, the government could order proceedings under the Right to Fair Compensation and Transparency in Land Acquisition Rehabilitation and Resettlement Act, 2013 and acquire the land for “public purpose”.
 - **No court can take cognisance relating to property vested in the Corporation**, except when the Corporation files a complaint. **No legal suit can be filed against officials of the Corporation without a prior notice of two months** and not later than six months from the date of complaint.

- **The Jammu and Kashmir Land Grants Act, 1960**, which regulates grant of government land on lease and earlier applied to urban areas of Jammu, Srinagar and towns, will **now be extended to the entire UT**. The amendment omits the permanent resident clause to get government land on lease for “residential purposes”.
- **Contract farming:** Amendments to the **Agrarian Reforms Act, 1976** paves the way for contract farming. Earlier, people vested with ownership rights under this act could only transfer land to the government of Jammu and Kashmir. This has been broadened to the “Government, or its agencies and instrumentalities”. Besides, the ownership of such land could only be transferred as a mortgage for loans. **Now, it can be transferred for mortgages as well as contract farming and leases.**

General Consent To CBI

The **Maharashtra government has withdrawn “general consent”** given to the Central Bureau of Investigation (CBI) to probe cases in the state. The decision means the central agency will have to get consent from the state government for **every case it registers in Maharashtra.**

Types Of Cases Where CBI Is Involved In State Level

The CBI is divided into **three categories** when it comes to investigation.

- **Anti-Corruption Division** investigates cases against public servants under the control of the central government, public servants in public sector undertakings, also under the control of the central government, cases against public servants working under state governments, which have been entrusted to the CBI by the state, and serious departmental irregularities committed by the above mentioned.
- **The Economic Offences Division** investigates financial crimes, bank frauds, money laundering, illegal money market operations, graft in PSUs and banks.
- **The Special Crimes Division** handles cases of conventional nature such as offences relating to internal security, espionage, sabotage, narcotics and psychotropic substances, antiquities, murders, dacoities/robberies, and cheating among others. It is this unit that has taken over the Sushant Singh Rajput case.

Maharashtra’s Withdrawal Of General Consent

- **Section 6 of the Delhi Special Establishments Act** empowers the state, making its **consent mandatory for handing over any case to the CBI.**
- By an order issued in 1989, Maharashtra had given general consent allowing the central agency to take over any case. However, the Maharashtra government was vary about the Special Crimes Division taking over the probe into the alleged **TRP (Television Rating Points) scam** being investigated by the Mumbai Police.
- Maharashtra has withdrawn the consent as **doubts are being raised over its use for political purposes.** The Honourable Supreme Court too, had in the past termed **CBI a ‘caged parrot’.**
- However, the withdrawal of general consent to the CBI **will not impact cases which the CBI is already investigating,** like the Sushant Singh Rajput case.

DAY-NRLM in J&K

- The Union Cabinet has approved a special package of Rs 520 crore for a period of five years till financial year 2023-24, in Jammu and Kashmir and Ladakh under the Deendayal Antyodaya Yojana- National Rural Livelihood Mission (DAY-NRLM).
- The programme, aimed at women, will ensure they get better access to credit facilities.

- The extension of the NRLM will ensure that two third rural women will be covered and around 10.58 lakh women will get the benefit from the special package in J&K and Ladakh.
- The decision is aligned with Centre's aim to universalise all centrally sponsored beneficiary-oriented schemes in J&K and Ladakh in a time-bound manner.

DAY-NRLM

- DAY-NRLM is a centrally sponsored programme that aims at eliminating rural poverty through promotion of multiple livelihoods and improved access to financial services for the estimated 10 crore rural poor households.
- It involves working with community institutions through community professionals in the spirit of self-help, making it different from the previous poverty eradication programmes.
- The programme seeks to reach out to all rural poor households, estimated at about 10 crore households, and impact their livelihoods through universal social mobilization.
- It does this by organizing one-woman member from each rural poor household into Self Help Groups (SHGs), their training and capacity building, facilitating their micro-livelihoods plans, and enabling them to implement their livelihoods plans through accessing financial resources from their own institutions and the banks.
- Across India, there are 63 lakh Self Help Groups (SHGs) with seven crore women as members who had taken ₹3,00,000 crores from banks and financial institutions as loans. Of these loans only 2.3% loans have turned into NPAs.

Cost Of A Plate Of Food Report

- World Food Programme (WFP) recently published the '**Cost of a Plate of Food 2020**' report, on the occasion of World Food Day (October 16).
- The report highlights the impact of various factors on people's access to affordable food.
- It takes an estimated per capita average income across each country and calculates the **percentage of income that people have to spend for a basic meal** (some beans or lentils for example, and a carbohydrate matching local preferences).
- This is the third edition of the report (formerly called Counting the Beans) with 36 countries featuring in the report this year.

Highlights Of The Report

- The report highlights **conflict and climate change** as the core reasons for hunger in many countries, as they force people to move away from their homes, land and jobs. This leads to a drastic reduction in incomes and the availability of affordable food.
- Now COVID-19 has added another challenge faced by most vulnerable groups, through increased unemployment, loss of remittances and weak economies.
- The pandemic has also disrupted trade and supply chains resulting in local food price increases, which contribute to making food more unaffordable to millions of people in the world.
- For millions of people, missing a day's wages means missing a day's worth of food, for themselves and their children. This can also cause rising social tensions and instability.

Status In Various Countries And Regions

- Sub-Saharan Africa in particular is the worst affected, with 17 out of the top 20 countries in the report coming from this region. The region's high dependency on food imports makes it vulnerable to global economic conditions. Moreover, due to its dependence on high informal labour, huge number of workers are vulnerable to sudden losses of income.
- **South Sudan** is at the top of the list, with basic ingredients costing 186 % of a person's daily income.

- **India** stands at 28th position as per the percentage of money, people have to pay on a plate of food compared to their salaries.

South Sudan		US\$392.82
Burundi		US\$90.73
Malawi		US\$74.00
Haiti		US\$73.76
Sudan		US\$60.52
Mali		US\$48.62
Mozambique		US\$46.19
Zimbabwe		US\$46.17
The Democratic Republic of the Congo		US\$43.93
Congo		US\$32.12

- On an average an Indian spends 3.5% of his/ her daily income (or US\$7.37) for a plate of food as compared to 0.6% (US\$1.26) by a person living in New York.
- Such differences bring into focus the huge inequalities between people living in developing countries and others in more prosperous parts of the world.

Way Ahead

- The report highlights the work that still needs to be done, with multiple pressures continuing to put affordable food beyond the reach of millions. The goal of a zero hunger world will truly be realized, only when these issues are addressed effectively.
- WFP suggests that, inequalities can be addressed with more investment in the short term to support people from the impact of Covid-19.
- Further, greater emphasis is needed on building sustainable food systems in the long term as a foundation for access to affordable and nutritious food.
- Thus, countries should work towards sustainable local food systems that are climate smart, culture and context specific, inclusive, caring and accountable.

Leaves for Single Male Parent

- Male government employees who are single parents are now entitled to child care leave (CCL). The aim is to bring ease-of-living for government servants.
- Single male parent included employees who are unmarried or widower or divorcee and might therefore be expected to take up the responsibility of caring for a child single-handedly.
- In addition, the Leave Travel Concession (LTC) might be availed by the employee even if he was on child care leave.
- The child care leave could be granted at 100% of leave salary for the first 365 days and 80% of leave salary for the next 365 days.
- In case of a disabled child, the condition of availing Child Care Leave up to the age of 22 years of the child has been removed and now Child Care Leave can be availed by a government servant for a disabled child of any age.

Mental Health Day

- World Mental Health Day is celebrated on 10th October every year. The day is marked for global mental health education and awareness. It is also celebrated to advocate against social stigma associated with mental health issues.
- The day was celebrated for the first time in 1992 at the initiative of the World Federation for Mental Health, a global mental health organisation with members in more than 150 countries.
- Mental health is the state of someone who is functioning at a satisfactory level of emotional and behavioural adjustment. It is the absence of any mental illness.

- Even before the pandemic, the statistics showed a grim situation with about 450 million people worldwide living with some form of mental disorder
- Moreover, throughout the pandemic, statistics show an alarming increase in the number of people being affected by mental health issues.
- Thus, this year's theme is **Mental Health** for All: Greater Investment – Greater Access.

Mental Health In India

- According to a WHO report, India is the most depressed country in the world. The report says, between 1990 and 2017, one in seven people from India have suffered mental illness such as depression, anxiety and other severe conditions.
- India also has a very low number of health professionals to deal with mental health issues. These challenges require government's as well as citizens' immediate attention.

National Authority for Recycling of Ships

- The Central Government has notified the **Directorate General of Shipping** as National Authority for Recycling of Ships. The notification was issued under the Recycling of Ships Act, 2019.
- The National Authority of Ship Recycling will be set up in Gandhinagar, Gujarat.
- As an apex body, DG Shipping is authorized to administer, supervise and monitor all activities relating to ship recycling in the country.
- India is the largest ship-breaking player in the world, recycling around 70 lakh gross tonnage every year, followed closely by Bangladesh that recycles 68 lakh gross tonnage.
- Around 800 vessels are sent for breaking every year around the world. India accounts for around 30% of that work. Of this, Alang (in Gujarat), accounts for over 95 % of the total ships recycled in India.

Hong Kong Convention for Ship Recycling

- Under Ship Recycling Act, 2019, India has acceded to Hong Kong Convention for Ship Recycling under International Maritime Organization (IMO).
- IMO adopted the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships in 2009.
- The guidelines are aimed at ensuring that ships, being recycled after reaching the end of their operational lives, do not pose any unnecessary risks to human health, safety and the environment.
- DG Shipping is a representative of India in the IMO and enforces the conventions.

Atal Tunnel

- The Prime Minister recently inaugurated the Atal Tunnel at Rohtang in Himachal Pradesh. Named after former Prime Minister Atal Bihari Vajpayee, it is the world's longest highway tunnel above the altitude of 10,000 feet (3000 metres).
- The 9-km-long tunnel under the Pir Panjal range, will reduce the distance between Manali and Leh by 46 km and the travel time by about 4 to 5 hours.
- It provides all-weather connectivity to the landlocked valley of Lahaul-Spiti, which remains cut-off for nearly six months in a year as the Rohtang Pass is usually covered with snow between November and April.
- The horseshoe shaped single-tube, double-lane tunnel is also the country's first tunnel to have an escape tunnel within the main tunnel because of the topography.

- This would provide an emergency exit in case of any untoward incident which may make the main tunnel unusable.

<ul style="list-style-type: none"> • Length: 9.02 km • Shape: Horse shoe <p>Located below the Rohtang Pass, it connects Manali to Lahaul-Spiti Valley</p>	<ul style="list-style-type: none"> • Distance reduced: 46 km • Time saved: 5 hours • Altitude: 3,000 m above mean sea level • Single-tube, double lane tunnel • Maximum vehicle speed: 80 km/hr 	<ul style="list-style-type: none"> • Telephone facility: Every 150 m • Fire hydrant: Every 60 m • Emergency exits: Every 500 m 	<ul style="list-style-type: none"> • Turning cavern: Every 2.2 km • Air quality monitor: Every 1 km • Automatic incident detection system with CCTV cameras: Every 250 m
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Benefits

- The tunnel is significant from the military logistics viewpoint, as it will provide better connectivity to the armed forces in reaching Ladakh and will save significant transport costs in the long run.
- It will also give a boost to tourism and winter sports in the region, creating employment opportunities.

Multi-modal Logistic Park

- The **Ministry for Road Transport and Highways** recently laid the foundation stone for **country’s first** Multi-Modal Logistic Park at Jogighopa in Assam. The MMLP will be developed under the **Bharatmala Pariyojana**.
- The Rs 694 crore park, being made by National Highways and Infrastructure Development Corporation Ltd (NHIDCL), will provide direct air, road, rail and waterways connectivity.
- The park spread across 317 acres in Bongaigaon district of lower Assam will have direct connectivity with National Highway 17, the proposed Jogighopa waterway terminal on Brahmaputra, the newly constructed Rupsi and Guwahati airports as well as the main railway route.
- To be completed by 2023, the park will reduce trade cost by 10%, have cargo capacity of 13 million metric tons (MMT) per year and act as a single platform for cargo, warehousing, custom clearance, parking and maintenance services.
- The Ministry has planned to develop 35 MMLPs with the aim to improve the transport of freight and provide integrated storage and warehousing support in the country.

Benefits

- The park will serve as a growth engine for Assam's economic development and would provide direct and indirect employment to about 20 lakh people.
- The Jogighopa MMLP will become a major logistics and export-import hub, catering to not only the Northeast, but also parts of eastern India, Nepal, Bhutan and Bangladesh.
- Products from Bhutan, as well as other states of the Northeast, can be transported to the Jogighopa MMLP and then transported by road, rail or air to other parts of the country or abroad.

Bharatmala Pariyojana

- Bharatmala Pariyojana (Project) is a centrally-sponsored and funded umbrella program for the highways sector. It focuses on optimizing efficiency of freight and passenger movement across the country by bridging critical infrastructure gaps.
- It includes effective interventions like development of Economic Corridors, Inter Corridors and Feeder Routes, National Corridor Efficiency Improvement, Border and International connectivity roads, Coastal and Port connectivity roads and Green-field expressways.
- It is both an enabler and beneficiary of other key schemes, such as Sagarmala, Dedicated Freight Corridors, Industrial corridors, UDAN-RCS, BharatNet, Digital India and Make in India.

Features

- Improvement in efficiency of existing corridors through development of Multimodal Logistics Parks and elimination of choke point.
- Enhance focus on improving connectivity in North East and leverage synergies with Inland Waterways
- Emphasis on use of technology & scientific planning for Project Preparation and Asset Monitoring
- Improving connectivity in the North East

NHIDCL

National Highways and Infrastructure Development Corporation Limited(NHIDCL) was created in 2014 as a fully owned company of the Ministry of Road Transport and Highways to expedite construction of National Highway projects with specific focus on Northeast India.

Global Wealth Report 2020

- The Global Wealth Report 2020 was recently published by the **Credit Suisse Research Institute**. The Credit Suisse Group is a Switzerland-based multinational investment bank.
- The report generally tracks both the growth and distribution of wealth – in terms of the numbers of millionaires and billionaires and the proportion of wealth that they hold. It also tracks the status of inequality around the world.
- The 2020 report has analyzed the household wealth of 5.2 billion people across the world.
- **Wealth** is defined in terms of “net worth” of an individual. This, is calculated by adding up the value of financial assets (such as money) and real assets (such as houses) and then subtracting any debts an individual may have.

Global Highlights

- In 2019, total global wealth rose by USD 36.3 trillion to \$399.2 trillion and wealth per adult reached USD 77,309, increasing by 8.5% from 2018.
- For the world as a whole, the report estimates that by June 2020, the **total global household wealth** increased by USD 1 trillion from January 2020, a rise of 0.25%.
- Efforts by various governments like lower interest rates and easy credit norms as a response to the pandemic are the reasons behind this growth.
- Without the pandemic, the best estimate of **global wealth per adult** would have risen from USD 77,309 at the start of the year to USD 78,376 by end-June 2020. Instead, the pandemic has caused average wealth to drop to USD 76,984.
- A significant development this year has been a rise in the savings rate due to lockdowns and other restrictions on spending, which led to a fall in consumption during the second quarter of 2020.

Region Wise Impact

- The pandemic eradicated the expected growth in North America. North America’s wealth per adult is projected to drop by 5% this year, and remain around this level in 2021.
- The most adversely affected region was Latin America, where the pandemic led to reductions in GDP by 13%.
- Among the major global economies, the United Kingdom has seen the biggest relative erosion of wealth.
- Only China and India saw gains in household wealth in the first half of the year, growing by 4.4% and 1.6%, respectively.

Inequality Data

- The top 1% of the world, with more than \$1 million each, hold 43% of global wealth and about 2.8 billion adults have less than \$10,000, collectively owning just 1.4% of global wealth.
- Female workers, millennials and minorities were hit the most by the pandemic, mainly because of their high representation in businesses such as restaurants, hotels and retail that have been badly affected.
- The number of millionaires remained stable after increasing to 51.9 million last year, while the group of the ultra-high net worth individuals with more than \$50 million in net assets lost only 120 members to 175,570.
- In the U.S., which has the most people in the top 1% wealth group and 39% of the world's millionaires, the inequality gap has narrowed.

Highlights From India

- As per the report, **wealth per adult in India** stood higher at USD 17,300 by end December 2019, from USD 14,569 in June 2019.
- Despite the pandemic and lockdowns, the average wealth of Indian adults rose marginally by \$120 (about Rs 8,800) to \$17,420 (Rs 12.77 lakh) by end-June 2020, against \$17,300 in December 2019.
- Financial assets of Indians in 2019 grew by 8.6%, non-financial assets grew by 12.5% and debts grew by 14.4%.
- Household wealth in India is dominated by property and other real assets, although financial assets have grown over time, now forming 22 per cent of overall assets.
- Inequality Data From India
 - The country had 9,07,000 adults in the top 1 per cent of global wealth holders, which is a 1.8 per cent share.
 - With 4,593 ultra-high-net-worth individuals in the country as of end-2019, India was fourth after the US, China and Germany in the group of ultra-high-net-worth individuals.
 - India had approximately 912,000 millionaires, accounting for 2 per cent of 51.9 million millionaires globally by end 2019.
 - Population with wealth below USD 10,000 fell from 78% to 73% and the proportion of adults with wealth above USD 100,000 rose from 1.8% to 2.3%.

Compensation Cess

- In a change from its earlier position, the Finance Ministry has said that the Centre would borrow from the market to pay the GST compensation shortfall of Rs 1.1 lakh crore to states.
- This change comes after the Goods and Services Tax (GST) Council had failed to reach an agreement on the issue of borrowings to meet the shortfalls in compensation cess collections.

Norms of Borrowing

- Under a Special Window, the estimated shortfall of ₹1.1 lakh crore (assuming all States join) will be borrowed by the Union government in parts. The borrowed amount will be passed on to the States as a back-to-back loan.
- The back-to-back loan would be similar to the way funding from multilateral institutions such as the World Bank and Asian Development Bank is passed to states, where the Centre borrows and then lends to states.

The ₹1.1 lakh crore question

- 21 States had agreed to borrow from market to meet GST shortfalls
- Now, Centre will borrow and lend to States
- This may help lower borrowing costs for States with higher deficits



■ Won't raise fiscal deficit or general government debt, says Finance Ministry

- So instead of states taking small loans, one big loan will be taken by the Centre and distributed to states on the exact same terms. Thus, the interest rate at which the Centre will borrow, will be passed on to the states.

Reasons For The Change

- The change in Centre's decision comes after RBI had expressed concerns over Centre's decision of asking the states to borrow to meet the shortfall.
- RBI had also pointed that the Centre can borrow the amount at a cheaper rate compared to the States. The RBI also assured the Centre that it will manage the Centre's borrowing in the best possible manner.
- The change has also come from the realisation that the states are in urgent need of funds.

Benefits

- The new approach of the Centre borrowing from the market is a far simpler mechanism and may help to resolve the conflict with States.
- It will act as a relief for States, particularly those that have high fiscal deficits, as they would have had to pay higher interest rates if they had to borrow from the market.
- This mechanism will also ensure that different States won't have to pay different interest rates for these borrowings, along with providing loans at a cheaper rate.
- The current arrangement, will not reflect in the fiscal deficit of the Centre and thus will not increase the Centre's fiscal deficit.
- The finance ministry has also clarified that the general government (States+Centre) borrowings will not increase after this step.

Response Of States

- After the current announcement, states earlier opposing the Centre have appreciated the move and said that they are willing to negotiate with the Centre.
- However, some states have asked the Centre to borrow the whole compensation deficit of Rs 2.35 lakh crore this year itself, instead of borrowing only Rs 1.1 lakh crore.

Note: Please refer The Recitals (August), for details on the compensation cess issue.

Regulatory Sandbox at IFSC

- The International Financial Services Centres Authority (IFSCA) has introduced a framework for regulatory sandbox. The regulatory sandbox will operate within the IFSC located at GIFT City.
- It will enable entities to test their innovative financial technology (fintech) solutions in a live environment and on a limited set of real customers, for a limited timeframe with necessary safeguards.
- Entities operating in the capital market, banking, insurance and pension sectors as well as individuals and start-ups from India and FATF-compliant jurisdictions, shall be eligible for participation in the regulatory sandbox.
- Entities that want to participate in the sandbox to showcase their innovative fintech solutions, concepts and business models will have to apply to IFSCA.
- IFSCA shall assess the applications and extend suitable regulatory relaxations to commence limited purpose testing in the sandbox.

Innovation Sandbox

- As an additional step towards creating an innovation-centric ecosystem in the IFSC, IFSCA has proposed the creation of an 'Innovation Sandbox'.

- It will be a testing environment where fintech firms can test their solutions in isolation from the live market, based on market-related data made available by the market infrastructure institutions (MIIs) operating in the IFSC.
- The Innovation Sandbox will be managed and facilitated by the MIIs operating within the IFSC.

IFSCA

- The IFSCA was established in April, 2020 with its headquarters in Gandhinagar Gujarat. It is a unified authority to regulate all financial services in International Financial Services Centres (IFSCs) in the country.
- The first IFSC in the country has been set up at the Gujarat International Finance Tec-City (GIFT) in Gandhinagar.
- The main function of the authority is to regulate financial products such as securities, deposits or contracts of insurance, financial services, and financial institutions which have been previously approved by any appropriate regulator in an IFSC.
- As per the Act, the regulators include SEBI, RBI, IRDAI and the The Pension Fund Regulatory and Development Authority.

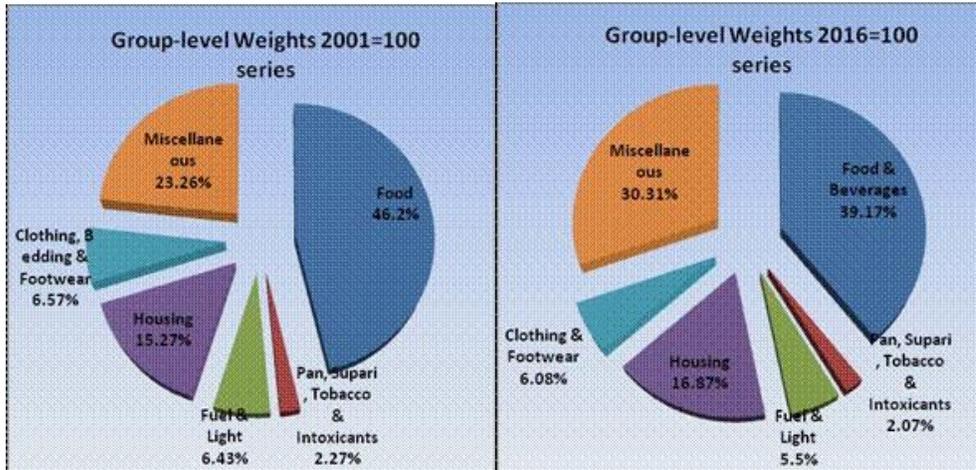
Expansion Of Jute Packaging

- The Cabinet Committee on Economic Affairs has approved that 100% of the food grains and 20% of the sugar shall be mandatorily packed in diversified jute bags.
- Further, the decision also mandates that initially 10 per cent of the indents of jute bags for packing food grains would be placed through reverse auction on the GeM portal. This will gradually lead to a regime of price discovery.
- The Government has expanded the scope of mandatory packaging norms under the Jute Packaging Material (JPM) Act, 1987.
- Under the JPM Act, the government is required to consider and provide for the compulsory use of jute packaging material in the supply and distribution of certain commodities in the interest of production of raw jute and jute packaging material.
- Nearly 3.7 lakh workers and several lakh farm families are dependent for their livelihood on the jute sectors.
- The industry is predominantly dependent on government sector which purchases jute bags of value of more than Rs. 7,500 crore every year for packing foodgrains.
- Thus, the government has been making regular efforts for the development of jute sector; increasing the quality and productivity of raw jute, diversification of jute sector and also boosting and sustaining demand for jute products.
- The current approval will benefit farmers and workers located in the Eastern and North Eastern regions of the country particularly in the states of West Bengal, Bihar, Odisha, Assam, Andhra Pradesh, Meghalaya and Tripura.

CPI-IW

- The Ministry of Labour and Employment Ministry has revised the base year of the Consumer Price Index for Industrial Workers (CPI-IW) from 2001 to 2016.
- The CPI-IW is used as a benchmark for calculating dearness allowance for government employees, dearness relief for pensioners. It is also used in the determination and revision of minimum wages in scheduled employments.

- The new series is more representative in character and reflects the latest consumption pattern of the industrial workers.
- The labour bureau has also decided that it will now revise the base year every five years.



Changes

- In the new 2016 series, a total of 88 centres have been covered as against 78 centres in the 2001 series. The sample size has been increased to 48,384 families from 41,040 families in the 2001 series.
- The number of selected markets for collection of retail price data has also been increased to 317 under the 2016 series compared to 289 covered in the 2001 series. The number of states/UTs has increased to 28 under as against 25 in the 2001 series.
- The number of items directly retained in the index basket has increased to 463 items over 392 items in the old series.
- In the new series, the Geometric mean based methodology (GM of Price Relatives) is used for the compilation of indices as against Arithmetic mean used in 2001 series.
- Following the change, the index will give 39% weight to food and beverage consumption of workers now as against 46.2% earlier. In contrast, spending on housing will get almost 17% weight as against 15.2% earlier.
- Among consumption categories, a segment comprising spending on heads like education, health and transport by workers has been given a sizable jump in weight from 23% earlier to 30% now.

Impact

- As per the government, the change will not have any immediate impact on the dearness allowance (DA) paid to government employees, as amidst the pandemic, the government had decided to freeze DA at current rates till July next year.
- Since, the basket for CPI-IW prepared by the Labour Ministry and the CPI is prepared by the Statistics Ministry are similar, a change in base year could narrow the difference between these two numbers and provide a more realistic base for calculation of DA.

Heeng Cultivation

- Scientists at CSIR-Institute of Himalayan Bioresource, Palampur (IHBT), have started cultivation of heeng (Asafoetida) in Lahual-Spiti valley.
- Heeng is not cultivated in India. Thus, this will make Himachal Pradesh the first state to cultivate heeng in the country.

- The herb's biological nomenclature is *Ferula asafoetida*. It is a herbaceous perennial plant and stores most of its nutrients inside its deep fleshy roots.
- Asafoetida is endemic to Iran and Afghanistan, the main global suppliers and thrives in dry and cold desert conditions.
- The plant can withstand a maximum temperature between 35 and 40 degree, whereas during winters, it can survive in temperatures up to minus 4 degree. During extreme weather, the plant can get dormant.
- India imports about 1,200 tonnes of raw heeng worth Rs 600 crore from Iran, Afghanistan and Uzbekistan. Some European countries too use it for its medicinal properties.
- The medicinal properties of heeng include relief from digestive and stomach disorders. It helps in solving problems related to asthma and bronchitis. The herb is also used to deal with menstrual pain and pre-mature labour.
- As per the project, the institute will provide cultivation knowledge and skilling to local farmers. Seed production centres are also in the pipeline.

India-Japan Cooperation in 5G tech, AI and Critical Information Infrastructure

- India and Japan have finalised an **agreement on cyber-security** to boost cooperation on **5G technology, Artificial Intelligence, Internet of Things (IoT) and critical information infrastructure**.
- Cooperation in critical information infrastructure would include infrastructure for banks and payment systems, telecommunications and internet, nuclear reactors and energy transmission systems, transport systems such as air traffic control, and water supply systems.
- This development is significant as both countries face challenges from hacking and other **threats emanating from countries such as China and North Korea**. In 2016, Hitachi Payment Services faced problem when **malware caused the breach of financial data** and comprised the data of 3.2 million debit cards in India.
- Also, there has been **concerns over the snooping** by the Huawei Technologies Company and the ZTE Corporation of China.

India and Chinese Telecom Companies:

- Indian government had on December 30, 2019 announced its decision to let all network equipment makers, including the Huawei Technologies Co Ltd., to participate in the 5G trial in India.
- In the wake of the stand-off between the India and China along the LAC in eastern Ladakh, New Delhi banned the use of several apps linked to the companies based in China.
- However, the government had announced that it has **no plan to keep the Huawei Technologies Company and the ZTE Corporation of China out of the 5G rollout in India**.

Japan and Indo-Pacific

- Japan agreed to be the **lead partner in the connectivity pillar** of the IPOI. This was announced during **13th India-Japan foreign ministers' strategic dialogue** in Tokyo.
- The participating leaders also emphasised that a **free, open and inclusive Indo-Pacific** region must be premised on diversified and resilient supply chains. They welcomed the **Supply Chain Resilience Initiative between India, Japan, Australia** and other like-minded countries.

[For detailed discussion about Supply Chain Resilience Initiative, please refer the topic from August 2020 edition of CA magazine]

- IPOI is an **India-backed framework** aimed at making **meaningful efforts to create a safe and secure maritime domain** in the Indo-Pacific. It was unveiled by PM Modi at the East Asia Summit in November 2019.
- It has **seven pillars** – maritime security, trade and connectivity, disaster risk reduction and management, science and technology cooperation, reducing marine pollution, sustainable use of marine resources, and capacity building.

India-Norway Joint Commission Meeting

- The Sixth Session of the India-Norway Joint Commission was held on a virtual platform.
- Both sides reviewed the progress of the **Dialogue on Trade and Investment (DTI)**.
- The **first meeting of DTI** was held in January 2020 in New Delhi. It identified **areas of cooperation** to include maritime, fisheries, tourism, skill development, micro, small and medium-sized enterprises (MSME) and renewable energy among others areas.
- They also reviewed the progress made in the **Ocean Dialogue** and the initiatives undertaken by the Task Force on Blue Economy for Sustainable Development.
- India and Norway are incoming elected members of the United Nations Security Council. In this context, both sides agreed to engage in regular consultations at senior officials level on Security Council issues during the membership period 2021-22.

India-Norway: Areas of Cooperation

- **Establishment of the Dialogue on Trade and Investment** – To give impetus to business cooperation and participation of Norwegian companies in the flagship programmes of India.
- **MoU on India-Norway Ocean Dialogue** and the **establishment of the Joint Task Force** on Blue Economy – To promote multi-sectoral cooperation in various aspects of Blue Economy including sustainable use of the oceans, food security, energy sources, mineral exploration.
- **Norway-India Partnership Initiative (NIPI)** - to provide effective health care to the rural population, especially tribal groups including women and children, by improving access, enabling ownership and demand for services. NIPI works within the National Rural Health Mission (NRHM) of India.

India-Mexico High level Group on Trade, Investment and Cooperation

- The **fifth meeting of India-Mexico bilateral high-level group** on trade, investment and cooperation was held virtually.
- Agreements signed:
 - MoU between the Mexican Chamber of Electronics telecommunication and information Technologies (CANIETI) and Electronics and Computer software export Promotion Council of India
 - MoU between the Mexican Business Council of foreign trade investment and Technology (COMCE) and Federation of Indian Chambers of Commerce and industry (FICCI)

India-Mexico: Relationship

- Mexico was the first Latin American nation that recognised the independence of India in 1947. Both sides established their diplomatic relation on August 1, 1950.
- Bilateral trade between these two countries stand at \$10 billion. India mainly exports gems, jewellery, Textiles, software and leather to Mexico. India imports, fertilizers, machinery, petroleum and Chemicals from Mexico.

India -Taiwan Trade Deal

There is increasing support within India **to start talks on a trade deal with Taiwan** as both countries have seen a decline in their respective relations with China. However, at official level, **India has shown reluctance in launching talks with Taiwan** for a trade deal.

Why India Should Start Trade Talks With Taiwan

- Trade deal with Taiwan would help **India's goal of seeking greater investments** in technology and electronics.
- The current government, in October 2020, gave approval to firms including Taiwan's Foxconn Technology Group, Wistron Corp. and Pegatron Corp. to **attract investment worth more than 10.5 trillion rupees** (\$143 billion) for smartphone production over five years.
- A formal trade deal with Taiwan would attract many such investment there by helping India in its vision of Atma Nirbhar Bharat.
- In 2018 India and Taiwan signed an **updated bilateral investment agreement** to expand economic ties. Trade between them grew 18% to \$7.2 billion in 2019.
- India along with Australia, Japan and US is trying to create **an alternative supply chain to diversify away from China** in the wake of Coronavirus pandemic. In this context, trade deal with Taiwan would help diversify the supply chain.

Why India Is Reluctant

- India has mostly remained cautious about this as it did not want to jeopardise its relations with China.
- Also, any trade deal with Taiwan would **involve a messy fight with China** once any pact is registered at the World Trade Organization.
- China is **firmly opposed to such a deal** asserting that the **one-China principle** is the common consensus of the international community including India, and serves as the **political foundation for China to develop relations with any country**.

India-Taiwan Relations

- India does not have formal diplomatic ties with Taiwan. Like most countries, it maintains commercial ties with Taiwan.
- In 1995, New Delhi set up the **India-Taipei Association (ITA)** in Taipei to promote interactions between the two sides and to facilitate business, tourism, and cultural exchanges.
- The India-Taipei Association has also been authorized to provide all consular and passport services. In the same year, Taiwan too established the Taipei Economic and Cultural Center in Delhi.
- Recently there has been warming of ties. **In May 2020**, two members of the Indian Parliament **virtually attended the newly re-elected President Tsai's swearing ceremony**.
- In 2019, India - Taiwan trade volume was US\$7 billion, growing at a rate of 20% YoY.
- **Major Indian exports to Taiwan** include waste oil, naphtha, cereals, cotton, organic chemicals, copper, aluminum and food residues.
- **Major Taiwanese exports** to India include integrated circuits, machinery and other electronic products. India is also keen to attract Taiwanese investment particularly in hi-tech and labour-intensive industries.
- More than 80 Taiwanese companies and entities currently have a presence in India.

India and Taiwan Think Tanks Join Hands for Indo-Pacific Cooperation

- The **Taiwan-Asia Exchange Foundation (TAEF)**, a leading think tank from Taiwan has signed a memorandum with India's **National Maritime Foundation (NMF)** in order to foster **cooperation in the Indo-Pacific region** as part of Taiwan's South bound policy.
- The island nation **named India as one of its New Southbound Policy target countries** in 2016.

- Under the Southbound policy, the Government of Taiwan is to enhance cooperation with South Asian, South East Asian countries and Australia.

India-UK Defence Logistics Pact

- India and the UK are in the **final stages** of agreeing on a **key defence logistics pact**. The pact will help in **reciprocal use of airfields, bases, spares and supplies**.
- This reflects a policy shift in London as the UK government finalises its Integrated Review of Britain's foreign policy, defence and international development in the post-Brexit world.

Significance

- India will be able to access range of ports and military bases in the Indo-Pacific region. After the pact, India can access ports and military bases from the **Garrisons** in the Gulf to **Keeling Island** in the South Indian Ocean and strategic military locations such as **Busan and Okinawa**.
- India will also be able to access **Naval facilities in the Atlantic**.
- Apart from the **military strategic value** of such a pact, it signals a **foreign policy shift on London's** part on the China and Pakistan questions.
- For long, the **UK has tried to balance relations** between China and the US, as well as India and Pakistan. Hence, such pact signals that the **UK is increasingly wary of China**, and is **unlikely to let Pakistan's sensitivities hinder** a truly strategic partnership with India.
- It signals that India is likely to emerge as a key theme in the UK's post-Brexit worldview.

India-France to Launch Constellation of Maritime Surveillance Satellites

- India and France will jointly launch the constellation of maritime surveillance satellites for the Indian Ocean Region.
- This constellation will be able to **trace illegal spillage of oil by ships**. In August 2019, French space agency CNES and Indian counterpart ISRO collaborated on this.
- The **monitoring centre will be based in India**. Parts of the satellites will be built in both the countries and launched from India

Existing Collaboration

- CNES and the ISRO are operating a number of climate-monitoring satellites together. **TRISHNA**, a **thermal infrared observer** will also be a part of the constellation.
- Both TRISHNA and Oceansat-3 Argos Mission will augment the maritime surveillance constellation
- India and France are also working together on Gaganyaan, India's first manned mission in space. France is also a part of ISRO's Venus Mission, **Shukrayaan**.
- In 2011, Megha-Tropiques and SARAL-Altika in 2013 were launched for climate and ocean weather monitoring.

India Launches Flash Flood Guidance Services for South Asia

- India has launched first- of-its kind Flash Flood Guidance services for South Asian countries — India, Bangladesh, Bhutan, Nepal and Sri Lanka.
- This service will issue **impact-based forecasting of floods**, which are very sudden and of short duration, at watershed and also city level.
- The system has been **designed by the India Meteorological Department (IMD)**.

- It will provide the necessary products in real-time to support the development of warnings for flash floods about 6-12 hours in advance at the watershed level with resolution of 4km x 4km for the flash flood prone South Asian countries.
- Flash floods are **highly localised with very high peak** and usually have less than six hours between the occurrence of rainfall and peak flood.
- There is **lack of flash flood warning capabilities** across the world.

Quad Ministerial Meeting

India's External Affairs Minister (EAM) visited Japan to participate in the **Second India-Australia-Japan-USA** (also known as **Quad**) Ministerial Meeting. EAM also held bilateral consultations with his counterparts of Australia, USA and Japan during this visit.

Key Highlights

- The **first Quad ministerial meeting** took place in **New York in September 2019**.
- Despite the current global pandemic, this meeting was a testimony to the importance that these Consultations have gained, especially in recent times.
- The participating leaders called for a coordinated response to the challenges including financial problems emanating from the pandemic; need to share best practices to combat Covid-19; **increasing the resilience of supply chains**; and enhancing access to affordable vaccines, medicines and medical equipment.
- They reaffirmed their collective vision of maintaining a **free, open and inclusive Indo-Pacific** and also reiterated their firm support to **ASEAN centrality** in the region.

What is Quad Grouping

- The grouping of **four democracies –India, Australia, US and Japan–** is known as the quadrilateral security dialogue or quad.
- It was first mooted by Japanese Prime Minister Shinzo Abe in 2007. However, due to Chinese resistance and reluctance shown by India, it could not move ahead.
- The aim of this grouping is to **ensure a free and open international order based on the rule of law in the Indo- Pacific**.

Quad Countries and China

- **USA** – Due to the growing regional competition between Beijing and Washington, USA is moving in all directions to make allies to contain China's rise. **US-China trade tension, USA accusing China for current pandemic, assertiveness of China in the South China Sea** etc. are few issues between these two countries.
- **India** – Current border standoff at LAC is forcing India to recalibrate its ties with China. Also, growing bonhomie between China and Pakistan is a cause of worry for India.
- **Australia** - Australia is concerned about China's growing interest in its land, infrastructure and politics, and influence on its universities. Recently, Australia asked for an international investigation into the origin of Coronavirus. However, China responded by imposing financial sanctions on Australia.
- **Japan** - Japan is concerned about China's territorial transgression in the region. Both countries are involved in a dispute over Senkaku Islands (Diaoyu Islands). Also, Japanese economy is highly dependent on Chinese trade.

Challenges

- **Assertiveness of China** – In recent times, China's aggressiveness has been manifested in the straits of Taiwan, South China Sea, eastern Ladakh and, Hong Kong. After the Second Quad Ministerial

meeting held in October 2020, China **reiterated its criticism** of the meeting by saying that it is opposed to the **formation of "exclusive cliques"** harming third party's interests.

- **Approach of Member Countries** – While USA is quite vocal in naming the aggressive China, other members show restraint and avoid naming China directly. There is difference in the approach as well. E.g. USA looks Indo-Pacific region militarily. On the other hand, India views this region diplomatically.
- **ASEAN** – Many analysts believe the elephant in the room is the ASEAN. As of now there are no signs that the ASEAN is willing to take a united stand on many issues so far raised by Quad. It would be difficult for the Quad to execute any effective policy minus the cooperation from the ASEAN countries.

Quad and Sri Lanka

- Sri Lanka is grappling with questions about the **potential rise of the 'Quad' as a military alliance** and the **securitisation of the Indian Ocean**.
- Just after the recent Tokyo meeting of Quad, **India invited Australia to join the trilateral Malabar exercise**, which already included Japan and the US. This has raised the apprehension of Sri Lanka about the rise of Quad as an exclusive military alliance.

[Also refer the topic "**Australia to be Part of Malabar Exercise**" from prelims section July 2020 edition of CA magazine]

India-US 2+2 Ministerial Dialogue

India hosted the **third India-U.S. 2+2 Ministerial Dialogue** in New Delhi. The first two 2+2 Ministerial dialogues were held in **New Delhi in September 2018** and in **Washington DC in 2019**. The agenda for the third Dialogue covered all bilateral, regional and global issues of mutual interest.

This 2+2 Ministerial is the **highest-level institutional mechanism** between the two countries. It provides for a **review of the security, defence and strategic partnership** between India and the United States.

Key Highlights

A. Documents Announced During the Dialogue:

- Basic Exchange and Cooperation Agreement (BECA)
- MoU for Technical Cooperation in Earth Observations and Earth Sciences
- Arrangement extending the duration of the MOU concerning cooperation with the Global Center for Nuclear Energy Partnership, India
- Agreement for the Electronic Exchange of Customs Data between the Postal Operators

B. Appreciated Cooperation Between the Two Countries During COVID-19 Pandemic

- 200 ventilators provided by the United States Agency for International Development (USAID) to the Indian Red Cross Society
- India's export of Personal Protective Equipment (PPE), essential medicines, and therapeutics to the United States.

C. Shared Vision for the Indo-Pacific and Global Leadership

- Both sides reiterated their commitment to maintaining a free, open, inclusive, peaceful, and prosperous Indo-Pacific built on a rules-based international order, underpinned by ASEAN centrality and rule of law.

BECA and its Significance

- **BECA**, known as **Basic Exchange and Cooperation Agreement**, would allow India and the US to access a wide variety of geospatial data from the each other, such as detailed maps, nautical and aeronautical charts, as well as imagery.

- The agreement creates a framework for classified data in this domain to be shared. This data will give **India's long-range missiles or drones the ability to strike targets** thousands of kilometres away with great accuracy.
- With the signing of BECA, India will be able to access the “**highly accurate navigation satellite networks**” run by the US.
- The completion of BECA allows New Delhi to become a “**major defence partner**” of the US. India and US have already signed **GSOMIA** (General Security of Military Information Agreement in 2002), **LEMOA** (Logistics Exchange Memorandum of Agreement in 2016), **COMCASA** (Communications Compatibility and Security Agreement in 2018).

India–Australia Circular Economy Hackathon (I-ACE)

- I-ACE was conceived during a virtual summit on 4 June 2020, between the Indian and Australian prime ministers. It is aimed at exploring **innovative ways to boost circular economy** in India and Australia.
- The hackathon will be Organised by - **Atal Innovation Mission (AIM)**, in association with **Commonwealth Scientific and Industrial Research Organisation (CSIRO)**.
- The **four key themes** for the hackathon are as follows:
 - Innovation in packaging reducing packaging waste
 - Innovation in food supply chains avoiding waste
 - Creating opportunities for plastic waste reduction
 - Recycling critical energy metals and e-waste

Circular Economy - An economy where products are designed for reuse and recyclability. Almost everything gets reused, remanufactured, and recycled into a raw material or used as a source of energy.

G20 Banknote Depicting J&K As Separate Entity

- The global map, printed on the rear side of **Saudi Arabia's special G20 Summit currency note**, shows **entire Jammu and Kashmir**, including Pakistan-occupied-Kashmir (PoK), as a **separate territory**.
- The new currency note was released by Saudi Arabia to commemorate the kingdom's presidency of the G20 international forum.
- India has lodged a protest with Saudi Arabia over the distortion of Indian boundaries.

Conflict Between Armenia and Azerbaijan

- **Military action in Nagorno-Karabakh**, a region disputed between Armenia and Azerbaijan, has resulted in the death of at least 100 civilians and Armenian combatants.
- Armenia and Azerbaijan are two former Soviet Union republics in the Caucasus region.

Why These Countries Are Fighting?

- At the heart of the decades-old conflict is the Nagorno-Karabakh region. **It is recognised as part of Azerbaijan, but it is controlled by ethnic Armenians.**
- The region has been part of Azerbaijan territory since the Soviet era. When the Soviet Union began to collapse in the late 1980s, Armenia's regional parliament voted for the



region's transfer to Armenia; the Soviet authorities turned down the demand.

- The countries fought a bloody war over the region in the late 1980s and early 1990s. Although they declared a ceasefire, brokered by Russia in 1994, they have never managed to agree a peace treaty.

What Are The Stakes For Other Countries?

- Due to the **involvement of regional rivals Turkey and Russia**, this conflict has attracted worldwide attention. Muslim-majority **Turkey backs Azerbaijan**.
- Turkey's support for Azerbaijan may be seen as an attempt to **counter Russia's influence in the region of South Caucasus**.
- For all countries, the region is an **important transit route for the supply of oil and natural gas to the European Union**.

China-Bangladesh Friendship

- Chinese President Xi Jinping has expressed his willingness to work with Bangladesh in order to **better align development strategies** between the two countries. He also urged Bangladesh to **jointly promote the construction of Belt and Road Initiative (BRI)**.
- Chinese President made these remarks on the occasion of 45th anniversary of the establishment of the bilateral diplomatic relationship between China and Bangladesh.

Growing Friendship

- Beijing began its **diplomatic relations with Dhaka in 1976**. The cooperation between the two countries began as a process of comprehensive cooperation for trade, economic cooperation, and technology exchange.
- **China replaced India as the top trade partner** in Bangladesh in 2015.
- President Xi Jinping visited Bangladesh in 2016 and investments worth around \$24 billion were announced.
- Beijing granted **duty free access to 97 percent of Bangladeshi products** effective from July 1, 2020. Bangladesh has also recently requested from China an **infrastructure fund worth \$64 billion**.
- China has offered help to Bangladesh in order to deal with the COVID-19 pandemic on the condition that Bangladesh will agree to form **sister city alliances with Chinese cities**. These alliances are considered as a tool to develop people-to-people relations.
- China has also stated that **Dhaka will be a priority** should Chinese researchers develop a vaccine against the new coronavirus.

Chinese Assistance to Sri Lanka

- China has announced a **USD 90 million grant to Sri Lanka**. This financial assistance would be used for medical care, education and water supplies in Sri Lanka's rural areas.
- The Sri Lankan president had sought help from a visiting Chinese delegation in **disproving a perception that China-funded megaprojects are "debt traps."**
- China considers Sri Lanka to be a critical link in its massive Belt and Road global infrastructure building initiative and has provided billions of dollars in loans for Sri Lankan projects over the past decade.

Criticism

- Critics say that the **Chinese-funded projects are not financially viable** and that Sri Lanka will face difficulties in repaying the loans.

- In 2017, Sri Lanka leased out a Chinese-built port in Hambantota to a Chinese company for 99 years to recover from the heavy burden of repaying the Chinese loan the country received to build it.

Thailand Anti-Government Protests

Thailand is witnessing **pro-democracy demonstrations** with protesters demanding that the **monarchy be reformed** and that **Prime Minister Prayuth Chan-ocha resign**.

Existing Political System in Thailand

- Until 1932, Thailand was an absolute monarchy. It was converted to a constitutional monarchy in 1932.
- Following a coup in 1947, Thailand has been ruled by the military for the most part. The current ruler, **Maha Vajiralongkorn, became king** in December 2016. Prime Minister Chan-ocha came to power through a coup in 2014.
- Chan-ocha, endorsed by the king, is alleged to have meddled with electoral laws during the 2019 elections, which has enabled him to remain in power.
- Traditionally, Thailand's political divide has been between the "**red shirts**" (populists and supporters of Shinawatra) and the "**yellow shirts** (loyalists of the royalty). Populist leader Thaksin Shinawatra was ousted as Prime Minister by the military in 2006 and has been in exile since.

Sri Lanka Passed 20th Amendment

The controversial 20th Amendment to Sri Lanka's Constitution was passed in Parliament with two-thirds majority. The amendment envisages **expansive powers and greater immunity** for the Executive President.

Key Highlights

- The 20th Amendment **rolls back Sri Lanka's 19th Amendment** that sought to clip presidential powers, while strengthening Parliament.
- The new legislation in turn **reduces the Prime Minister's role to a ceremonial one**.

[For detailed discussion on 19th Amendment and 18th Amendment, please refer the topic "**Sri Lanka to Abolish 19th Amendment to the Constitution**" from August 2020 edition of CA magazine]

Israel-Sudan Peace Deal

- Sudan and Israel have agreed to **normalise relations in a US-brokered deal** to end decades of hostility. Sudan has **technically been at war with Israel** since its 1948 foundation.
- It makes Sudan the **3rd Arab country** to forge diplomatic relations with the Jewish state in two months.
- In 1979, Egypt became the first Arab state to make peace with Israel. Recently, **the United Arab Emirates and Bahrain** had signed a normalisation deal with Israel.

[For detailed discussions, please refer the topics "**Israel-UAE Peace Deal**" from August 2020 edition of CA magazine]

Sudan Removed From US' State Sponsor of Terrorism List

- Days before Sudan signed a peace deal with Israel, it has been removed from US' State Sponsor of Terrorism List.
- **Sudan was added to the list in 1993** after it was accused of harboring groups such as Hezbollah and Palestinian militant outfits.

- Now only **three countries** are there in the list. These are – Syria, Iran and North Korea.

France Encourages EU Allies to Take Measures Against Turkey

- France encouraged EU allies to **adopt measures against Turkey** after Turkish President Recep Tayyip Erdogan questioned French President Emmanuel Macron's mental health.
- Turkey also called for a boycott of French goods.

Why France Is Being Criticized By Muslim World?

- French President is being heavily criticized in the Middle East and in Muslim world for making **controversial remarks on Islam**.
- In early October, the French President described Islam as a "religion in crisis,".
- A few weeks later, an 18-year-old Islamist sympathiser, allegedly beheaded the teacher for showing blasphemous caricatures of Prophet Muhammad in a Civics class on freedom of expression. President Macron called the incident "Islamist terrorism".

China Passes Export Law

- China Export Law has been passed and it will come into effect on December 1.
- It will allow Beijing to "**take reciprocal measures**" against countries that abuse export controls and pose a threat to national security.
- Chinese authorities will formulate and adjust an **export control list of items to be published in a "timely manner"**.
- According to the new law, **technical data related to items covered** will also be subjected to export controls.

Analysis:

- Souring ties between the two nations had led to the US taking action against several Chinese companies including Huawei Technologies Co., ByteDance Ltd.'s TikTok app, Tencent Holdings Ltd.'s WeChat and Semiconductor Manufacturing International Corp.
- The new law enables China to take reciprocal action in order to protect its national interests.
- The **existing control list of China was much narrower** than the one used by the US. With the passing of new law, this list could be further expanded to include even more products and technologies.

India Assumes Chairmanship Of Governing Body Of ILO

- After a gap of 35 years, India has assumed the chairmanship of the governing body of the International Labour Organisation (ILO).
- **Labour secretary Apurva Chandra** has been **elected as the chairperson** of the governing body of the organisation for the **period October 2020- June 2021**.

About The Governing Body

- The governing body is the **executive body of the ILO**. It meets **thrice a year**, in March, June and November.
- It takes decisions on ILO policy, decides the agenda of the International Labour Conference, adopts the draft programme and budget of the organisation for submission to the conference, and elects the Director-General.

About ILO

- It is a United Nations agency whose mandate is to advance social and economic justice through setting international labour standards.
- It was **created in 1919**, as part of the Treaty of Versailles (that ended World War I).
- In 1946, the **ILO became a specialized agency** of the newly formed United Nations. It is the **first and oldest specialised agency** of the UN. At present, ILO has 187 members.
- **HQ-** Geneva, Switzerland

'Beaten or Broken? Informality and COVID-19' Report

The **World Bank** has released a report titled “**Beaten or Broken? Informality and Covid-19 in South Asia**”. The report analyses the **impact of school closures because of COVID on children**.

Key Findings

- The prolonged closure of schools due to the pandemic in India may cause a **loss of over USD 400 billion** in the country's future earnings, besides substantial learning losses.
- South Asia region stands to lose **USD 622 billion from the school closures** in the present scenario or up to USD 880 billion in a more pessimistic scenario.
- The regional loss is **largely driven by India** and all countries will lose substantial shares of their GDP.
- The report claims that South Asia is set to plunge into its worst-ever recession in 2020 due to the devastating impacts of Covid-19.
- The report also noted that the pandemic may cause up to **5.5 million students to drop out from the education system** in South Asia. This will cause substantial learning losses, which, in turn, will have a lifetime **impact on the productivity** of a generation of students.
- The projected learning loss for the region is **0.5 years of learning-adjusted years of schooling (LAYS)**, falling from 6.5 LAYS to 6.0 LAYS.

Learning Adjusted Year of Schooling' (LAYS)

- It is a concept introduced by World Bank. It **seeks to combine access and learning outcomes into a single measure**.
- It combines quantity (years of schooling) and quality (how much kids know at a given grade level) into a single summary measure of human capital in a society.

SLINEX-20

- The **eighth edition** of the **annual bilateral maritime exercise** SLINEX between the **Indian Navy and Sri Lanka Navy** was conducted at Trincomalee in Sri Lanka.
- The previous edition of SLINEX was conducted off Visakhapatnam in September 2019.
- The exercise aims to enhance inter-operability, improve mutual understanding and exchange best practices between both navies.
- Synergy developed during SLINEX exercises resulted in **seamless coordination of joint Sri Lanka – India efforts** in September 2020 to **render assistance to MT New Diamond**, a Very Large Crude Carrier (VLCC), which had **caught fire off the East Coast of Sri Lanka**.

Sprut Light Tanks for Use in High Altitude Areas

- India is in advanced talks with Russia to acquire a newly developed **Sprut light tank**.

- These tanks could be useful in high altitude areas like the Line of Actual Control in eastern Ladakh.
- India has a robust tank force, but all of them are **heavy main battle tanks** — T72s, T90s and the indigenously developed Arjun — considered more suitable for operations in the plains.
- The Sprut SDM1 is **designed to be airdropped from an aircraft** with its crew of three sitting inside the tank.
- India has operated light tanks in the past and it has come in handy during the 1947-48 Kashmir operations as well as the 1962 war with China, but these have been slowly phased out.

Pakistan on 'Enhanced Follow-up List'

Asia Pacific group of Financial Action Task Force (FATF) has kept **Pakistan in its 'Enhanced Follow Up' list**. The status of Pakistan was **degraded from "regular follow-up" to "enhanced follow up"** in August 2019.

Why Pakistan Has Been Kept In This List

- The Asia Pacific Group (APG) released the first **Follow-Up Report on Mutual Evaluation of Pakistan**.
- In this report the organization has underlined that the Pakistan's progress on the 40 FATF recommendations on the effectiveness of anti-money laundering and combating financing terror system **largely remained unchanged** -- non-compliant on four counts, partially compliant on 25 counts and largely compliant on nine recommendations.

What is Mutual Evaluation Report

- The APG Mutual Evaluations is a **peer-review system** to determine whether countries meet the compliance standards for money laundering and terror financing.
- After a country submits a Mutual Evaluation report, APG members can decide to place a member either through regular or enhanced follow-up.
- While a regular follow-up means **just biennial reports**, a country put under enhanced follow-up has to **send four reports of compliance the following year**.

Background

- Financial Action Task Force (FATF) had placed Pakistan on the **grey list in June 2018** and issued the action plan.
- In February 2020, FATF gave Pakistan a four-month grace period to complete its **27-point action plan**. The deadline was June, but the agency extended it again due to the postponement of its plenary because of the Covid-19 pandemic.

Current Status

- In a three-day virtual plenary meeting, held in October 2020, FATF decided to retain Pakistan on its "grey list".
- Pakistan has been given time till February 2021 to address what the multilateral watchdog said were **"very serious deficiencies"** in its **efforts to counter terror financing**.
- Repeated failure to deliver on FATF's action plan would result in a **country being put in the "black list"**.

About FATF

- FATF is an **inter-governmental body** set up in 1989, with an aim to set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system.

- It was established during the G7 Summit in Paris.
- It has **35-member (Including India)** jurisdictions and **2 regional organisations** - the European Commission and the Gulf Co-operation Council. In addition, it has two observers and nine associate members, which are primarily regional organisations.
- There are also a number of observer organisations, which either have a related area of work that deals with enforcement like Europol, financial institutions like the International Monetary Fund (IMF) and UN bodies or groups linked with counter terrorism or money laundering.
- The FATF functions as an independent body guiding policy, with its president selected by the plenary for a one-year period.

Assam-Mizoram Border Dispute

Recently residents of Assam and Mizoram have clashed twice over territory, injuring at least eight people and torching a few huts and small shops. It spotlights the **long-standing inter-state boundary issues in the Northeast**, particularly between Assam and the states that were carved out of it.

What Led To Assam-Mizoram Border Dispute?

- The boundary between present-day Assam and Mizoram, 165 km long today, dates back to the **colonial era, when Mizoram was known as Lushai Hills, a district of Assam.**
- The dispute stems from a **notification of 1875** that differentiated Lushai Hills from the plains of Cachar, and **another of 1933** that demarcates a boundary between Lushai Hills and Manipur.
- Mizoram believes the **boundary should be demarcated on the basis of 1875 notification**, which is derived from the **Bengal Eastern Frontier Regulation (BEFR) Act, 1873**. Mizo leaders have argued in the past against the demarcation notified in 1933 because Mizo society was not consulted.
- Assam government **follows the 1933 demarcation**, and that was the point of conflict.

Other Boundary Issues In The Northeast?

- During British rule, Assam included present-day Nagaland, Arunachal Pradesh and Meghalaya besides Mizoram, which became separate state one by one. Today, Assam has boundary problems with each of them.
- **Nagaland shares a 500-km boundary with Assam.** According to a 2008 research paper from the Manohar Parrikar Institute for Defence Studies and Analyses, violent clashes and armed conflicts, marked by killings, have occurred on the **Assam-Nagaland** border since 1965.
- On the **Assam-Arunachal Pradesh** boundary (over 800 km), clashes were first reported in 1992, according to the same research paper. Since then, there have been several accusations of illegal encroachment from both sides, and intermittent clashes. This boundary issue too is being heard by the Supreme Court.
- As per Meghalaya government statements, today there are 12 areas of dispute between **Assam and Meghalaya.**

Bodoland Statehood Movement

A new organisation has announced the revival of the Bodoland statehood movement ahead of the elections to the **Bodoland Territorial Council (BTC)**.

The Bodoland Dispute

- Bodos are the **single largest tribal community in Assam**, making up over 5-6 per cent of the state's population. They have controlled large parts of Assam in the past.

- The four districts in Assam — Kokrajhar, Baksa, Udalguri and Chirang — that constitute the **Bodo Territorial Area District (BTAD)**, are home to several ethnic groups.
- The Bodos have had a long history of separatist demands, marked by armed struggle.
 - **In 1966-67**, the demand for a separate state called Bodoland was raised under the banner of the **Plains Tribals Council of Assam (PTCA)**, a political outfit.
 - **In 1987**, the All Bodo Students Union (ABSU) renewed the demand. “**Divide Assam fifty-fifty**”, was a call given by the ABSU’s then leader, Upendra Nath Brahma.
- The unrest was a fallout of the Assam Movement (1979-85), whose culmination — **the Assam Accord** — addressed the demands of protection and safeguards for the “Assamese people”, leading the Bodos to launch a movement to protect their own identity.

Bodo Accord

- The movement was doused temporarily with **signing of the first Bodo Accord in February 1993** between government and moderate leaders of the movement, including those of **All Bodo Students’ Union (ABSU)**. This resulted in the creation of **Bodoland Autonomous Council (BAC)**.
- The extremist **National Democratic Front of Boroland (NDFB)**, which split into four factions later on, **rejected this “trivial” accord**. The discontent bred another outfit, the **Bodo Liberation Tigers (BLT)**, which rivalled the NDFB.
- The Centre signed the **second Bodo peace accord with the BLT in February 2003**, elevating the BAC to the BTC. The outfit was disbanded and most of its leaders formed the Bodoland People’s Front that ruled the BTC for several terms until the council was dissolved on April 27.
- **The third Bodo accord** signed on January 27, 2020 among the Centre, the Assam government and Bodo organisations, including leaders of all the NDFB factions and the ABSU, envisaged to **upgrade BTC to BTR**. The Bodo signatories had then said that the accord negated the need for another statehood movement.

Revival of the Bodoland statehood movement

- The five-decade-old demand for a **separate State for the Bodos** was said to have ended with the signing of the **third peace accord**. However now the **All India Bodo People’s National League for Bodoland Statehood** has vowed to rekindle the statehood movement.
- Members of this league, formed on October 15, 2020 panned the **BTR accord**, which they said would spell disaster for the Bodo community.
- According to the new group, the new accord has been a betrayal of the Bodo people. **Besides being an inferior accord, it prescribes a reduction of the area currently under the BTC.**
- The accord has a provision for excluding from the BTR villages with more than 50% non-Bodos and including villages with **more than 50% Bodo people left out of the BTC map after the 2003 accord.**

2020 Nobel: Physics

- Three scientists won this year’s Nobel Prize in Physics for advancing our **understanding of black holes**. It was awarded one half to **Roger Penrose** and the other half jointly to **Reinhard Genzel** and **Andrea Ghez**.
- **Briton Roger Penrose** received half of this year’s prize “**for the discovery that black hole formation is a robust prediction of the general theory of relativity.**”
- **German Reinhard Genzel** and **American Andrea Ghez** received the second half of the prize “**for the discovery of a supermassive compact object at the center of our galaxy.**”
- **Ghez** is the **fourth woman to be awarded the Nobel Prize for physics**, after Marie Curie in 1903, Maria Goeppert-Mayer in 1963, and Donna Strickland in 2018.

The Black Hole

- Over a hundred years before **Albert Einstein** published his **theory of relativity**, **John Michell and Pierre-Simon Laplace** had speculated that **extremely dense stars** could have such high gravity that not even light could escape them. These would become **invisible (dark stars)**.
- This idea came back to life in **1916** when just a few weeks after **Einstein** had published his theory of relativity, **German astrophysicist Karl Schwarzschild** found a **solution to these equations**, having a feature that was later named '**event horizon**' — **the point of no return**, beyond which even light, the fastest object in the world, cannot escape.
- The theory explains **gravity**, as objects try to follow a straight line through a universe whose geometry is **warped by matter and energy**. As a result, planets, as well as light beams, follow curving paths. However, these concepts and their implications were so bizarre then that even Einstein refused to believe that it was possible.
- **Roger Penrose** with **Stephen Hawking** triggered a "renaissance" in the study of relativity in the 1960s, together, they helped firm up evidence for the Big Bang and black holes. Both have done more than anyone else since Einstein to deepen the knowledge of gravity. Sadly, this award was too much delayed to allow Hawking to share the credit.
- Penrose proved that if **too much mass accumulated** in too small a place, collapse into a **black hole was inevitable**.
 - At the **boundary of a black hole**, called the **event horizon**, one would have to go faster than the speed of light to escape it, which is impossible.
 - At the centre of a black hole, where the **density became infinite**, the laws of physics, would no longer apply.

A Supermassive Compact Object At The Center Of Our Galaxy (Second Half Of Nobel Prize)

- In 1990s **Reinhard Genzel and Andrea Ghez**, each leading a group of astronomers trained their sights on the **dust-covered center of our Milky Way** galaxy, a **region called Sagittarius A*(asterisk)**, where something strange was going on.
- They both found that there was "**an extremely heavy, invisible object** that pulls on the jumble of stars, causing them to rush around at dizzying speeds."
- It was a **black hole**. Not just an ordinary black hole, but a **supermassive black** hole, 4 million times the mass of our sun.
- Now scientists know that **all galaxies have supermassive black holes**. In 2019, scientists got the first optical image of a black hole.

2020 Nobel: Chemistry

- **Emmanuelle Charpentier** of **France** and **Jennifer Doudna** of U.S. won the Nobel Chemistry Prize for **gene-editing technique** known as the **CRISPR-Cas9 DNA snipping "scissors"**.
- It is the **first time** a Nobel science prize has gone to a **women-only** team. Prof. Charpentier, 51, and Prof. Doudna, 56, are just the **6th and 7th women** to receive Nobel Prize in Chemistry.
- The **first time a woman was honoured** with the chemistry prize was in **1911 when Marie Curie**, who also took the Physics Nobel in 1903, won after discovering the elements **radium and polonium**.

- While **researching a common harmful bacterium**, Prof. Charpentier discovered a previously unknown molecule — part of the bacteria's ancient immune system that disarms viruses by snipping off parts of their DNA.
- After publishing her research in 2011, Prof. Charpentier worked with Prof. Doudna and recreated **the bacteria's genetic scissors**, simplifying the tool so it was easier to use and apply to other genetic material.
- Using these, researchers can **change the DNA of animals, plants and microorganisms** with extremely high precision.
- This technology has had a **revolutionary impact** on the life sciences, is contributing to new cancer therapies and may make the dream of curing inherited diseases come true.
- The CRISPR/Cas9 tool has already contributed to **significant gains in crop resilience**, altering their genetic code to better withstand drought and pests.

CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats)

- CRISPR is a **family of DNA sequences** found in the genomes of **prokaryotic organisms** such as bacteria and archaea.
- These sequences are derived from **DNA fragments of bacteriophages** that had previously infected the prokaryote. They are used to **detect and destroy DNA** from similar bacteriophages during subsequent infections. Hence these sequences play a key role in the antiviral (i.e. anti-phage) defence system of prokaryotes.
- These systems have created **CRISPR gene editing** that commonly utilizes the **Cas9 gene**. This **editing process** has a wide variety of applications including basic biological research, development of biotechnology products, and treatment of diseases.
- CRISPR technology is a **simple yet powerful tool for editing genomes**. It allows researchers to easily **alter DNA sequences** and modify gene function.

2020 Nobel: Physiology or Medicine

- **Americans Harvey J Alter and Charles M Rice**, and **British scientist Michael Houghton** were awarded the **Nobel Prize for Medicine or Physiology** for the **discovery of hepatitis C virus**.
- The discoveries by three Nobel laureates have **helped design sensitive blood tests** that have eliminated the risk of **transfusion-transmitted** hepatitis. Their discovery also helped develop **antiviral drugs** directed at hepatitis C. This has now raised hopes of eradicating the virus from the world population.
- The **trio's** work helped explain a major source of blood-borne hepatitis that couldn't be explained by the hepatitis A and B viruses.

Hepatitis

- Hepatitis is **inflammation** of the **liver** tissue. Some people with hepatitis have no symptoms, whereas others develop yellow discolouration of the skin and whites of the eyes (jaundice), poor appetite, vomiting, tiredness, abdominal pain, and diarrhea.
- Hepatitis is most commonly caused by **viruses hepatitis A, B, C, D, and E**.
- Other causes include heavy alcohol use, certain medications, toxins, other infections, autoimmune diseases, and non-alcoholic steatohepatitis (**NASH**).

- **Hepatitis A and E** are mainly spread by contaminated **food and water**. **Hepatitis B** is mainly **sexually transmitted**, but may also be passed from mother to baby during pregnancy or childbirth and spread through infected blood. **Hepatitis C** is commonly spread through infected **blood** such as may occur during needle sharing by intravenous drug users. **Hepatitis D** can **only infect people** already infected with **hepatitis B**.
- Hepatitis **A, B, and D** are preventable with immunization.

Hepatitis C

- Hepatitis C is a **blood-borne virus** and causes Hepatitis C disease which affects the **liver**.
- According to **WHO**, "globally, an estimated **71 million people** have chronic hepatitis C virus infection and a significant number develop cirrhosis or liver cancer."
- A **vaccine** for the disease has still **not** been developed **but** it can be treated with the help of **anti-viral drugs**.

Nobel Prize

- The Nobel Prize is not a **single prize**, but five separate prizes that, according to **Alfred Nobel's 1895 will**, are awarded "to those who, during the preceding year, have conferred the greatest benefit to humankind".
- **Nobel Prizes** are awarded in the fields of Physics, Chemistry, Physiology or Medicine, Literature, and Peace (Nobel called this prize "fellowship among nations"). Nobel prizes are widely regarded as the most prestigious awards available in their respective fields.
- **Alfred Nobel** was a Swedish chemist, engineer, and industrialist most famously known for the invention of **dynamite**.
- Nobel Prizes were first awarded in 1901. In **1968**, a **sixth prize** was established in the field of **Economic Sciences**; however, it is not considered a "**Nobel Prize**" but a "**Nobel Memorial Prize**".
- The prestigious Nobel award comes with a gold medal and **prize money of 10 million Swedish kronor** (over USD 1,118,000).
- Although Nobel Prizes are not awarded posthumously if a person is awarded a prize and dies before receiving it the prize is presented.

THSTI Recognized as a Global Bioassay Laboratory by CEPI

- **Translational Health Science And Technology Institute (THSTI)**, an autonomous institute of the Department of Biotechnology, has now been recognized by the **Coalition of Epidemic Preparedness for Innovation (CEPI)** as one of the *Global Network of Laboratories* for centralized assessment of COVID 19 Vaccines.
- The CEPI network will initially involve six labs, one each in **Canada, Britain, Italy, the Netherlands, Bangladesh and India**.
- Under the CEPI's Global network, all Laboratory will use the same reagents and follow a common set of protocols to measure the immune response of multiple vaccine candidates under development and trial. This will greatly harmonize the Vaccine trial process and allow different vaccine candidates to be compared and speed up the selection of the most effective candidate.

Coalition of Epidemic Preparedness for Innovation (CEPI)

- CEPI is an innovative **global partnership** between public, private, philanthropic, and civil society organisations launched in Davos in 2017 **to develop vaccines to stop future epidemics**.

- Its mission is to **accelerate the development of vaccines** against emerging infectious diseases and **enable equitable access to these vaccines** for people during outbreaks.

Hydrogen Fuel Cell (HFC)

- **Council of Scientific and Industrial Research (CSIR)** and KPIT successfully ran trials of **India's first Hydrogen Fuel Cell (HFC) prototype car** running on an **indigenously developed** fuel cell stack at CSIR-National Chemical Laboratory, Pune.
- The fuel cell is a low-temperature **PEM (Proton Exchange Membrane) type Fuel Cell** that operates at **65-75 degree centigrade**, which is suitable for vehicular applications.
- Technology includes **a membrane electrode assembly, light-weight metal bipolar plate** and gasket design etc. that enabled running the fuel cell vehicle.
- Hydrogen Fuel Cell (HFC) technology uses **chemical reactions** between **hydrogen and oxygen (from air)** to generate electrical energy, eliminating the use of fossil fuels. It requires a much **smaller battery** for a very large operating range.
- Further, the fuel cell technology **emits only water**, thus **cutting down the emission** of harmful greenhouse gases along with other air pollutants. The technology, with further adoption and use, is poised to make the world a cleaner place with reduced air pollution levels.

Expansion of STEM Career Opportunities

- The Department of Science & Technology (DST) and IBM India announced collaborations to scale up two DST initiatives--**Vigyan Jyoti** and **Engage with Science (Vigyan Prasar)**.
- The aim is to expand existing opportunities for meritorious girls to nurture their interest in **Science Technology, Engineering, and Mathematics (STEM)**.
- **Vigyan Jyoti** is a programme, launched by DST in 2019, *to inspire girl students from grades 9 to 12 to pursue STEM* in their higher education, especially from the top colleges in the areas where girls are hugely underrepresented. Vigyan Jyoti focuses on solving the multidimensional problems associated with *meager representation of women in Engineering and Technology streams* in higher education by building confidence and excitement towards these streams.
- **Vigyan Prasar** is another initiative to build interest and create a community of practice with students, teachers, and scientists connecting the high school students to the higher education institutions.

MoUs on Supercomputing Infrastructure

- The **Centre for Development of Advanced Computing(C-DAC)** under the **Ministry of Electronics and Information Technology (MeITY)** signed a total of 13 MoUs with the premier academic and R&D institutions of India for *establishing Supercomputing Infrastructure with Assembly and Manufacturing* in India and Critical Components of **National Supercomputing Mission**.
- Supercomputing is key to so many areas like Computational Biology, Molecular Dynamics, National Security, Computational Chemistry, Cyber-Physical Systems, Big Data Analytics, Government Information Systems, and so on.
- The goal is to **develop indigenous hardware** encompassing exascale chip design, design and manufacture of exascale server boards, exascale interconnects and storage including silicon-photonics at C-DAC to achieve complete self-reliance.

National Supercomputing Mission

- The mission envisages **empowering national academic and R&D institutions** to spread over the country **by installing a vast supercomputing grid** comprising more than 70 high-performance computing facilities.
- The mission is implemented and steered jointly by the **Department of Science and Technology (DST)** and **Department of Electronics and Information Technology (DeitY)** at an estimated cost of Rs.4500 crore over a period of seven years to make India one of the world leaders in Supercomputing.
- The mission also includes the **development of highly professional High-Performance Computing (HPC) aware human resources** for meeting the challenges of development of these applications.
- The mission implementation would **bring supercomputing within the reach of large scientific & technology community** in the country and enable the country with a capacity to solve multi-disciplinary grand challenge problems.
- **Important Application Areas:** Climate Modelling, Weather Prediction, Aerospace Engineering , Molecular Dynamics, Atomic Energy Simulations, National Security/ Defence Applications, Seismic Analysis, Disaster Simulations and Management, Computational Chemistry, Discoveries beyond Earth (Astrophysics), Large Complex Systems Simulations and Cyber Physical Systems, Big Data Analytics, Finance etc

High Flow Rate Fluoride & Iron Removal Technology

- The CSIR-CMERI transferred its **High Flow Rate Fluoride & Iron Removal technology** to Capricans Aqua Private Limited, West Bengal.
- It is a **Community Level Water Purification System** which has a Flow-Rate capacity of 10,000 Ltr/hr and uses commonly available raw materials such as **sand, gravel and adsorbent materials**.
- It comprises a **three-stage purification process** which purifies water within permissible limits (1.5 ppm & 0.3 ppm for Fluoride and Iron respectively).
- The technology uses a **combination of Oxidation, Gravitational Settling and Chemisorption process** in an affordable package.
- The integrated backwashing profile of the technology will help in **improving the shelf-life of the filtration media** in a resource rationalised manner.
- The strategic deployment of this Community Level system at affected places can help to **turn the tide against the menace of Iron and Fluorosis** across the Nation.
- The number of Fluoride affected individuals are continuously increasing in a contaminated habitat in the last 50 years as per available statistics. This has been **happening in consonance with the disproportional depletion of Water Table**, which has led to multiplication of the level of concentration of Fluoride in the particular region.
- Besides, the technology is also a major thrust towards the AtmaNirbhar Bharat campaign. The proliferation of this technology will also help in **catalysing employment generation** opportunities for the Youth of the Nation.

Successful Flight Test of SMART

- India successfully flight-tested its indigenously developed **Supersonic Missile Assisted Release of Torpedo (SMART)** from Wheeler Island off the coast of Odisha.

- All the mission objectives were perfectly met, which included the missile flight upto range and altitude, separation of the nose cone, release of torpedo as well as the deployment of **Velocity Reduction Mechanism (VRM)**.
- SMART is a missile assisted release of **lightweight Anti-Submarine Torpedo System for Anti-Submarine Warfare (ASW) operations** far beyond Torpedo range.
- It takes off like a regular supersonic missile when launched from a warship or a truck-based coastal battery. When it approaches close to a submerged submarine, the missile would eject the torpedo system into the water and the torpedo will start moving towards its target to hit the submarine.
- It also **provides the exact location of the hostile submarine** to correct its flight path midway.
- The Defence Research and Development Organisation (DRDO) hailed it as a “**game changer**” in **anti-submarine warfare** as it is significant in establishing Anti-Submarine warfare capabilities.
- One of the most potent threats to surface ships is an undetected submarine and now with the SMART, it is **possible to remove the surface ship from the weapon danger zone of a submarine**. It will give Indian warships and shore-based units a crucial standoff tool in the face of growing submarine threat from adversaries like China and Pakistan.
- It has a **maximum range of 650 km**, a first for such a class of weapon in the world giving the Indian Navy a significant leap in engagement capabilities.

BrahMos Successfully Flight Tested

- BrahMos missile, featuring *indigenous Booster and Airframe Section* along with many other ‘Made in India’ sub-systems, were successfully flight tested for designated range, taking one more major step in enhancing the indigenous content.
- The test was carried out by the **Defence Research and Development Organisation** from ITR, **Balasore in Odisha**.
- This successful launch has paved the way for serial production of the indigenous booster and other indigenous components of the powerful BrahMos Weapon System realising **Atmanirbhar Bharat** pledge.

BrahMos Missile

- The name BrahMos is the amalgamation of the names of two rivers, the **Brahmaputra of India and the Moskva of Russia**. It has been jointly developed by DRDO, India, and NPOM, Russia.
- BRAHMOS is a **universal long-range supersonic cruise missile system** that can be **launched from land, sea and air**. It has a capacity to achieve the speed of **Mach 2.8**. A newer version, called **hypersonic cruise missiles**, under development is aimed at flying at speeds greater than Mach 5.
- BRAHMOS Weapon Systems has been inducted and is operational with **Indian Navy (IN) as well as Indian Army (IA)**. The first version of the BrahMos supersonic cruise missile was inducted into the Indian Navy in 2005.

New Shephard Rocket System

- A rocket system, called **New Shephard**, meant to take tourists to space successfully completed its seventh test launch.
- Named after **astronaut Alan Shephard**, the first American to go to space, the system is built by Amazon founder Jeff Bezos’s space company called **Blue Origin** and will eventually allow space tourists to **experience microgravity** by taking them over 100 km above the Earth.

- Essentially, it is a rocket system that has been designed to take astronauts and research payloads past the **Karman line** – the internationally recognised boundary of space.
- In 2018, Blue Origin was one of the ten companies selected by NASA to conduct studies and advance technologies to collect, process and use space-based resources for **missions to Moon and Mars**.
- The idea is to **provide easier and more cost-effective access to space** meant for purposes such as academic research, corporate technology development and entrepreneurial ventures among others.
- **Working Mechanism**
 - The rocket system consists of two parts, **the cabin or capsule** and **the rocket or the booster**. The cabin can accommodate experiments from small mini payloads up to 100 kg.
 - Further, the cabin is designed for six people and sits atop a 60-foot tall rocket and separates from it before crossing the Karman line, after which both vehicles fall back to the Earth.
 - The system is **a fully reusable, vertical take-off and vertical landing space vehicle** that accelerates for about 2.5 minutes before the engine cuts off.
 - After separating from the booster, the capsule free falls in space, while the booster performs an autonomously controlled vertical landing back to Earth. The capsule, on the other hand, lands back with the help of parachutes.

COVIRAP

- A new coronavirus diagnostic method, **COVIRAP**, using a low-cost portable unit, developed by researchers at the **Indian Institute of Technology (IIT), Kharagpur**, has been approved by the **Indian Council of Medical Research (ICMR)**.
- Once the viral RNA was extracted, the testing process took about one hour and it has a 94% sensitivity and 98% specificity in comparison to RT-PCR.
- Unlike the RT-PCR machine, which could cost up to ₹25 lakh, and needed to be operated by a molecular biologist, the **COVIRAP machine is cheaper** and costs only ₹5,000 to make and could be manufactured at even lower cost if economies of scale were applied by commercial manufacturers.
- The COVIRAP method **requires very little equipment, and is ideal for use in rural areas with limited facilities**.
- The COVIRAP method could be used to diagnose diseases such as **influenza, malaria, dengue and tuberculosis**.

IndiGen Programme

- Results from the extensive computation analysis of the 1029 sequenced genomes from India carried out by CSIR constituent labs were published.
- The current IndiGenomes data resource provides a **compendium of genetic variants representing the contemporary Indian population** with an objective to classify variants involved in mendelian disorders and improve precision medicine outcomes.
- The resource can also **enable the identification of markers** for carrier screening, variations causing genetic diseases, prevention of adverse events and provide better diagnosis and optimal therapy through mining data of clinically actionable pharmacogenetic variants.

IndiGen Programme

- **CSIR initiated the IndiGen Program** in April 2019 in order to fill the gap of whole genome sequences from different populations in India. It is **funded by CSIR** India through grants.
- The programme aims to **undertake whole genome sequencing** of thousands of individuals representing diverse ethnic groups from India. The objective is to **enable genetic epidemiology** and develop public health technologies applications using population genome data.
- The human genome datasets would also be **utilized for prioritizing Pharmacogenomics** variants specific for Indian population for optimizing therapy and minimizing adverse events.

Plasma Therapy Debate

- India's largest randomised controlled trial, **PLACID**, has found convalescent plasma therapy (CPT) ineffective in Covid-19.
- The study has found that while use of convalescent plasma seemed to improve resolution of shortness of breath and fatigue in patients with moderate Covid-19, this did not translate into a reduction in 28-day mortality or progression to severe disease.
- The ICMR has been cautious with convalescent plasma therapy because of the trial findings. Experts said, however, that guidelines are not necessarily binding and it is too early to dismiss CPT.
- However, there are other issues involved. The authorisation of convalescent plasma as treatment for Covid-19 in India has led to **questionable practices such as calls for donors on social media, and the sale of convalescent plasma on the black market.**
- Although convalescent plasma is a safe form of treatment when transfused in accordance to the regulations, it **involves resource-intensive processes** such as plasmapheresis, plasma storage, and measurement of neutralising antibodies. Only a limited number of institutes in India have the capacity to undertake these procedures in a quality-assured manner.
- The potential harms of the **non-immune components of convalescent plasma should be rigorously investigated**, only donor plasma with detectable titers of neutralizing antibodies should be given to trial participants, to ensure that the potential for benefit exists for all intervention arm patients.

CPT uses blood from people who've recovered from an illness to help others recover. Blood donated by people who've recovered from COVID-19 has antibodies to the virus that causes it. The donated blood is processed to remove blood cells, leaving behind liquid (plasma) and antibodies. These can be given to people with COVID-19 to boost their ability to fight the virus.

Soil-Transmitted Helminthiases (STH)

- 14 States have shown substantial reduction in worm prevalence in the **Soil-Transmitted Helminthiases (STH)** follow up prevalence survey conducted by the Ministry of Health.
- Soil-Transmitted Helminthiases (STH), also known as **parasitic intestinal worm infection**, is a significant public health concern mostly in low resource settings. These are known to have detrimental effects on **children's physical growth and wellbeing** and can cause **anemia and under-nutrition**.
- Regular deworming, as advised by the World Health Organization, eliminates worm infestation among children and adolescents living in areas with high STH burden.

- Albendazole tablet, approved by the World Health Organization (WHO), is used for treatment of intestinal worms in children and adolescents as part of **Mass Drug Administration (MDA)** programmes globally.
- The **National Deworming Day (NDD)**, launched in 2015, is a flagship program of the **Ministry of Health and Family Welfare**. It is implemented as a biannual single day programme implemented through the platforms of schools and anganwadis.
- Implementation of NDD is led by the **Ministry of Health and Family Welfare**, in collaboration with the Ministry of Women and Child Development, Ministry of Education and technical assistance from WHO and the technical partners.

CuRED

- The **Union Minister of Health** launched a website, **CuRED or CSIR Ushered Repurposed Drugs**, that gives comprehensive information about the numerous COVID-19 clinical trials.
- The website **provides information about the drugs, diagnostics and devices including the current stage of the trials**, that CSIR is engaged in partnership with Industry, other government departments and ministries.

Regional Raw Drug Repository

- The **Minister of Ayush** inaugurated the Regional Raw Drug Repository (RRDR) at All India Institute of Ayurveda in New Delhi. This RRDR is second in the series of repositories proposed by the **National Medicinal Plants Board (NMPB)**.
- RRDRs are important components of the Centrally Sponsored Scheme of **National AYUSH Mission**, which plays an important role in **medicinal plants cultivation**. In order to document the diversity in the genetics and chemistry of medicinal plants, **eight RRDR and one NRDR** have been proposed by the Ministry of AYUSH.
- This RRDR would play a role in **collection, documentation, and authentication of raw drugs** collected from the agro-climatic region, that is, the Southern Plateau Region
- This RRDR will also act as an **accredited reference library** for authentication of raw drugs and establish standard protocols and keys for authentication of raw drugs used in the herbal industries.

SERB – POWER (Promoting Opportunities for Women in Exploratory Research)

- The **Science and Technology Minister** launched the **SERB – POWER schemes** that aim to encourage emerging as well as **eminent women researchers** to undertake research and development (R&D) activities in frontier areas of science and engineering.
- Globally, just 30 per cent of the world's researchers are women while 18.6 per cent of India's full-time R&D personnel are women.
- The schemes will promote **women researchers in regular service in academic and research institutions** to take up R&D at the highest level through **two categories** of research support:

A. SERB – POWER Fellowship

- **Target:** Women researchers in **35-55 years of age**. Upto 25 Fellowships per year and not more than 75 at any point in time.

- **Components of support:** Fellowship of Rs. 15,000/- per month in addition to regular income; Research grant of Rs. 10 lakh per annum; and Overhead of Rs. 90,000/- per annum.
- **Duration:** Three years, without the possibility of extension. Once in a career.

B. SERB – POWER Research Grants

- It will ensure funding to undertake **highly impactful research** across all disciplines of Science & Technology.
- Under it, women researchers will be funded under two categories.
 - i) **Level one** includes women scientists from **IITs, IISERs, IISc, NITs**, central universities, and national labs of the Central government institutions. They will be eligible for funding up to Rs 60 lakhs for three years.
 - ii) **Level two** will comprise scientists and researchers from **state universities/ colleges and private academics**. They will be eligible for funding up to 30 lakhs for three years.

The new **Science Technology and Innovation Policy (STIP) 2020** will also emphasise on encouraging women scientists.

Science and Engineering Research Board (SERB)

- SERB is a statutory body under the **Department of Science and Technology**, Government of India, established by an Act of the Parliament of India in 2009 (**SERB ACT, 2008**).
- The Board is **chaired by the Secretary** to the Government of India in the Department of Science and Technology is a body under the Department of Science and Technology.

To Read more about National Science Technology and Innovation Policy, Please refer to The Recitals - June 2020.

India's First Seaplane Service

- India's first seaplane project was inaugurated on October 31, **the birth anniversary of Sardar Vallabhbhai Patel**. The seaplane will connect **Sabarmati Riverfront in Ahmedabad to Statue of Unity in Kevadia** in Narmada district.
- The seaplane, which will be **operated by SpiceJet, is a Twin Otter 300**. It is a 19-seater seaplane and will be able to accommodate 14 passengers.
- It can **cover up to 290 kilometres per hour** and can fly close to four hours at slower speed, which is ideally used for surveying. The seaplane can operate without pressurised cabin (supplemental cabin oxygen) upto 12500 feet.
- The seaplane may affect **Shoolpaneshwar Wildlife Sanctuary**, which is located at an approximate aerial distance of 2.1 km from the proposed project site.

Seaplane Project in India

- The first seaplane project of the country is part of a directive of the Union Ministry of Civil Aviation. As per the directive, the Airports Authority of India (AAI) requested state governments of **Gujarat, Assam, Andhra Pradesh and Telangana** and the administration of **Andaman & Nicobar** to propose potential locations for setting up water aerodromes to boost the tourism sector.
- In India, **Jal Hans**, a commercial seaplane service based in the Andaman and Nicobar Islands was **launched as a pilot project** in December 2010.

Impact on Environment

- The **water aerodrome is not a listed project/activity** in the Schedule to the **Environmental Impact Assessment Notification, 2006** and its amendments. However, the Expert Appraisal Committee was of the opinion that the activities proposed under the water aerodrome project may have a similar type of impact as that of an airport.
- During seaplane operations, there will be **turbulence created in the water** while takeoff and landing of seaplanes. This will lead to more operation processes i.e. **mixing of oxygen in the water**. This will have a positive impact on the aquatic ecosystem near seaplane operations **increasing oxygen content and decreasing carbon content** in this system.

Bioremediation Mechanism Technology

- The **National Institute of Ocean Technology (NIOT)** has developed an eco-friendly crude oil bioremediation mechanism technology using consortia of **marine microbes wheat bran (WB)** immobilized on agro-residue bacterial cells to fight oil spillage in oceans.
- These hydrocarbon degrading bacteria **don't depend on hydrocarbons** for survival, but have a metabolic mechanism where they use petroleum products as carbon and energy source and thus, help cleaning up oil spills.
- It was found that **complete breakdown and degradation of crude oil was achievable** using wheat bran marine bacterial consortia (which are low-cost non-toxic agro-residues) in an environmentally sustainable manner.
- These bacteria were **more effective in their immobilised state** than the free bacteria cells in degrading the oil spills, in addition to being more versatile and resistant to adverse conditions. They could **remove 84% of the oils within 10 days**.

Bioremediation can be defined as any process that **uses microorganisms or their enzymes to remove and or neutralize contaminants** within the environment (i.e., within soil and water) to their original condition.

Oil Spill

- A surge in **oil extraction through offshore drilling** has resulted in spillage of oil — accidentally or due to negligence. Industrial effluent discharge, waste burn-out and other manmade disasters polluting the marine environment are among other concerns.
- The present world crude oil production exceeds three billion tonnes a year, about half of which is transported through the sea routes. This, in turn, increases the risk of accidental oil spillage.
- Oil spills have the potential to cause huge environmental damage: they end up **accumulating in subsurface sediments transferring the toxic organic materials to the marine food chain**.
- Cleaning up of the oil spillage from the oceans without damaging the marine ecosystem is becoming an increasingly challenging task.

Ghar Tak Fibre Scheme

- The Ghar Tak Fibre Scheme was **inaugurated in Bihar** by the Prime Minister. The scheme is to be implemented by the **Ministry of Electronics and Information Technology**.
- It aims **to connect all 45,945 villages in Bihar with high-speed internet** by March 31, 2021.
- Under the scheme, Bihar has to provide **at least five fibre-to-the-home (FTTH) connections per village**, while there should also be **at least one WiFi hotspot per village**.

- Fiber to the home (FTTH), also called **fibre to the premises (FTTP)**, is the **installation and use of optical fibre from a central point** directly to individual buildings such as residences, apartment buildings and businesses to provide high-speed internet access.
- FTTH dramatically **increases connection speeds** available to computer users compared with technologies now used in most places.
- The scheme will **give an edge in providing digital services** including e-Education, e-Agriculture, Tele-Medicine, and other social security schemes in Bihar.
- It will give a big boost to **local employment generation** with the implementation of Bharat Net initiative.
- A village or a gram panchayat (GP) is considered 'lit up' under BharatNet when it consistently has internet connection and users at the end to verify the same.

BharatNet Project

- The BharatNet project initially began as the **National Optical Fibre Network in October 2011**.
- It is a project of national importance to **establish a highly scalable network infrastructure by using optical fiber** to provide on demand, affordable broadband connectivity of 2 Mbps to 20 Mbps for all households.
- The objective is to **facilitate the delivery of e-governance**, e-health, e-education, e-banking, Internet and other services to rural India.
- The project is now an integral **part of the Digital India initiative**- the flagship programme to empower citizens digitally and to bridge the digital gap between rural and urban India.
- The entire project is being funded by **Universal service Obligation Fund (USOF)**, which was set up for improving telecom services in rural and remote areas of the country.
- **Bharat Broadband Network Limited (BBNL)**, a special purpose vehicle, was set up by the Government of India under the Department of Telecommunications for **management, establishment, and operation of BharatNet**.

Mobile Application For Geo Tagging

- A Mobile application for Geo tagging the components of projects under **Pradhan Mantri Krishi Sinchayee Yojana- Accelerated Irrigation Benefits Programme (PMKSY-AIBP)** has been launched.
- Geo-tagging is the **process of ascertaining the geographical location of an image**. It is the process of adding geographical identification like latitude and longitude to various media such as a photo or video.
- The application is developed with the help of **Bhaskaracharya National Institute of Space Applications & Geo-informatics (BISAG-N)** to track the pace of work and actual status of the projects.
- It can be used by monitoring team/ project authorities **to capture the image of project components along with other details such as location, type of canal/ structure, completion status, etc** and this captured information can be submitted by the user for geo-tagging on the GIS portal developed for this purpose.
- It can be **operated in both online & offline mode** depending on the network availability in the region.

- An online **Management Information System (MIS)** has been developed for time to time review of the progress of works in projects. The **Remote Sensing techniques** are also being used to assess the cropped area in the command area of the prioritized projects.

Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)

- PMKSY is a **centrally sponsored scheme** launched in 2015. Its motto is to “**Har Khet Ko Paani**”.
- PMKSY has been conceived **amalgamating ongoing schemes viz.**
 - Accelerated Irrigation Benefit Programme (AIBP)
 - Integrated Watershed Management Programme (IWMP)
 - On Farm Water Management (OFWM)
- **Major Objectives of PMKSY is to:**
 - achieve convergence of investments in irrigation at the field level
 - expand cultivable area under assured irrigation
 - improve on-farm water use efficiency to reduce wastage of water
 - enhance the adoption of precision-irrigation and other water saving technologies (More crop per drop)
 - enhance recharge of aquifers
 - introduce sustainable water conservation practices by exploring the feasibility of reusing treated municipal wastewater for peri-urban agriculture
 - attract greater private investment in precision irrigation systems

Grand ICT Challenge

- ICT Grand Challenge was launched by the **National Jal Jeevan Mission** in partnership with the **Ministry of Electronics & Information Technology (MeitY)**.
- The aim is to create innovative, modular, and cost-effective solutions to develop a ‘**Smart Water Supply Measurement and Monitoring System**’ to be deployed at the village level. The ambitious mission focuses on service delivery rather than mere creation of infrastructure.
- This grand challenge will **harness the vibrant IoT ecosystems** of India for creating smart rural water supply eco-system to measure and monitor the service delivery of the water supply in rural areas.
- This challenge will **assure potable water supply through functional household tap** connection to every rural household of the country.
- The Grand challenge will provide support at ideation Stage, prototype development stage, deployment stage. The pilot will be conducted in 100 villages.

Production Linked Incentive Schemes

- The **Ministry of Chemicals and Fertilizers** has revised the **Production Linked Incentive Schemes** for promoting domestic manufacturing of bulk drugs and medical devices.
- In the revised guidelines, the minimum threshold investment requirement has been replaced by **committed investment taking into account availability of technology choices** which varies from product to product. The change has been made to **encourage efficient use of productive capital**.
- The Department of Pharmaceuticals earlier come out with the two Production Linked Incentive schemes-

- Production Linked Incentive scheme for promotion of domestic manufacturing of critical Key Starting Materials, Drug Intermediates and Active Pharmaceutical Ingredients in India
- Production Linked Incentive Scheme for Promoting Domestic Manufacturing of Medical Devices.
- Globally, Indian pharmaceutical industry is the **third largest in terms of volume** and contributes significantly to India's economic growth and export earnings.

Draft Coastal Shipping Bill 2020

- The **Ministry of Shipping** issued draft '**Coastal Shipping Bill, 2020**' for public consultation in lieu of part XIV of the **Merchant Shipping Act, 1958**.
- The **definition of coastal shipping and coastal waters has been expanded**.
- It is proposed to do away with the requirement of trading licence for Indian flag vessels for coastal trade.
- The Bill seeks to create a competitive environment and reduce transportation costs, while encouraging Indian vessels to increase their share in coastal shipping.
- The Bill also proposes integration of coastal maritime transport with inland waterways.
- There is a provision for **National Coastal and Inland Shipping Strategic Plan**.

Aditi Urja Sanch

- The Union Minister of Science and Technology and Earth Sciences inaugurated the **Dimethyl ether (DME)** fired "**Aditi Urja Sanch**" unit along with the **DME-LPG blended fuel cylinders**.
- Dimethyl ether (DME) is an **ultra-clean fuel**. CSIR-NCL (National Chemical Laboratory) has developed the **nation's first kind of DME pilot plant** with 20-24Kg/day capacity.
- The conventional LPG burner is not suitable for DME combustion as **DME density is different from LPG**. To address this issue, the new Burner is fully designed and fabricated by NCL for DME, DME - LPG blended mixtures and LPG combustion. The new nozzle design allows optimum oxygen ingress for combustion.

Integrated Theatre Command

- As a next step in defence reforms, after the appointment of the Chief of Defence Staff (CDS), the formation of **integrated theatre commands** is being considered.
- **Theaterisation means putting specific units of personnel from the three services** — Army, Navy and Air Force — **under a common theatre commander** so that they fight as a cohesive unit through rationalisation of manpower and resources.
- An integrated theatre command envisages a **unified command of the three Services, under a single commander**, for geographical theatres that are of security concern.
- The commander of such a force will be able to bring to **bear all resources at his disposal** — from the IAF, the Army and the Navy — with seamless efficacy. Its formation will **synergise the capabilities and combat potential of the three Services** during war and peace.
- The integrated theatre commander will **not be answerable to individual Services**, and will be free to train, equip and exercise his command to make it a cohesive fighting force.

- A committee headed by **Lieutenant General D B Shekatkar** had earlier recommended three new commands: **Northern, for China; Western, for the Pakistan border; and Southern, for maritime security.**
- **Advantages of Integrated Theatre Command**
 - i) One of the main advantages is that the leader of a unified command has **control over more varied resources**, compared to the heads of the commands under the services now. For instance, the head of one of the proposed commands, Air Defence Command, will have under him naval and Army resources, too, which can be used as per the threat perception. And the officer commanding the Pakistan or China border will have access to the Air Force's fighter jets and can use them if needed.
 - ii) The other key advantage is that through such integration and jointness the **three forces will be able to avoid duplication of resources.** The resources available under each service will be available to other services too.
 - iii) The services will get to know one another better, **strengthening cohesion in the defence establishment.**
- In the present structure, there are 17 commands, divided among the three services. The Army and the Air Force have seven commands each, while the Navy has three commands.

INS Kavaratti

- INS Kavaratti, **Anti-Submarine Warfare (ASW) stealth corvette**, built under **Project 28 (Kamorta Class)** was commissioned into the Indian Navy.
- It is last of the four ASW Corvettes, indigenously designed by the Indian Navy's in-house organisation, **Directorate of Naval Design** and constructed by **Garden Reach Shipbuilders & Engineers Ltd (GRSE)**. The other three ASW Corvettes are **INS Kamorta, INS Kadmatt and INS Kiltan.**
- Named after the capital of the Lakshadweep group of islands, INS Kavaratti has been constructed using **high-grade DMR 249A steel** produced in India.
- The ship has **enhanced stealth features** making it less susceptible to detection by the enemy.
- The ship is the **reincarnation of the erstwhile Arnala Class missile corvette** of the same name (INS Kavaratti – P 80) which participated in the 1971 war for the liberation of Bangladesh and many other operational deployments.
- The ship would be an **integral part of the Eastern Fleet under the Eastern Naval Command.**

Raising Day of Indo-Tibetan Border Police (ITBP)

- 59th Raising Day of the **Indo-Tibetan Border Police (ITBP)** was celebrated on 24th October, 2020.
- Indo-Tibetan Border Police was raised on October 24, 1962 **during India-China War** for reorganizing the **frontier intelligence and security set up along the Indo-Tibetan border.** Apart from guarding the border; the force is also **deployed for Anti Naxal operations** and other internal security duties.
- ITBP was initially **raised under the CRPF Act.** However, in 1992, Parliament enacted the ITBPF Act and the rules there under were framed in 1994.
- In the year 2004, in pursuance of GoM recommendations on **“One Border One Force”**, the entire stretch of India-China Border comprising 3488 Kms was assigned to the ITBP for Border Guarding duty and, accordingly, ITBP, replaced Assam Rifles in Sikkim and Arunachal Pradesh in 2004.

Stand-Off Anti Tank Missile

- India successfully test-fired the **Stand-off Anti-tank (SANT) Missile** off the coast of Odisha.
- The Missile was developed by the **Defence Research and Development Organisation (DRDO)** for the Indian Air Force (IAF) and will have both **Lock-on After Launch and Lock-on Before Launch capability**.
- It is, reportedly, an **upgrade on India's Helina missile** and believed to have a range of 7 to 8km.
- The new missile is said to have a **range of between 15 and 20km** and comes equipped with a nose-mounted active radar seeker, enabling the launch platform to be located at a safe distance from the target area.

Mass of Hydrogen In Distant Galaxies Measured

- Astronomers from the **National Centre for Radio Astrophysics (NCRA-TIFR)** and **Raman Research Institute (RRI)** have used the upgraded **Giant Metrewave Radio Telescope (GMRT)** to **measure the atomic hydrogen content of galaxies** seen as they were eight billion years ago when the universe was young.
- This discovery may help understand the mystery behind **declining star formation activity** in the Milky Way.
- Unlike stars which emit light strongly at optical wavelengths, the **atomic hydrogen signal** lies in the radio wavelengths, at a wavelength of 21 cm, and **can only be detected with radio telescopes**.
- Since the 21 cm signal is intrinsically very weak, and difficult to detect, the team used a technique called **“stacking” to combine the 21 cm signals of nearly 8,000 galaxies** that had earlier been identified with the help of optical telescopes. This method measures the average gas content of these galaxies.
- **Importance:**
 - Galaxies in the universe are made up mostly of gas and stars, with gas being converted into stars during the life of a galaxy. For understanding galaxies, it is required to determine how the amounts of both gas and stars change with time.
 - Astronomers have long known that galaxies formed stars at a higher rate when the universe was young than they do today. **The star formation activity in galaxies peaked about 8-10 billion years ago and has been declining steadily till today.**
 - The cause of this decline was unknown as there had been no information regarding the amount of atomic hydrogen gas — the primary fuel for star formation — in galaxies in these early times. This limitation was overcome by this development.
 - Given the intense star formation in these early galaxies, their atomic gas would be consumed by star formation in just one or two billion years.

Giant Metrewave Radio Telescope (GMRT)

- It is an array of **thirty fully steerable parabolic radio telescopes of 45 metre diameter**, observing at metre wavelengths.
- It is operated by the **National Centre for Radio Astrophysics (NCRA)**, a part of the Tata Institute of Fundamental Research, Mumbai.

- It was designed and built by a team led by the late pioneering astrophysicist **Govind Swarup** in the 1980s and 1990s.
- Its main goal was **to detect the 21 cm signal from the most distant galaxies** in the universe.

Vijayalakshmi Ramanan

- Wing Commander **Vijayalakshmi Ramanan, the first woman officer of the Indian Air Force**, passed away. She was 96.
- Born in February 1924, Vijayalakshmi, an obstetrician and gynaecologist by training, had originally joined the Indian Army in 1955 on what only meant to be a short-service commission.
- Instead, she was seconded to the Indian Air Force to become its first woman commissioned officer and ended up staying in the service for 24 years.
- She had been awarded the **Vishist Seva medal** for meritorious service.

Zombie Fires In Arctic Region

- The fire regimes in the Arctic are changing rapidly, with **'zombie fires'** *becoming more frequent* in addition to fires occurring in the once-frozen tundra, according to a new study.
- A 'zombie fire' is a **fire from a previous growing season that can smoulder under the ground which is made up of carbon-rich peat**. When the weather warms, the fire can reignite.

Key Findings Of The Study

- Fires in the Arctic is spreading to areas which were **formerly fire-resistant**. The tundra — north of the Arctic Circle — is drying up and vegetation there like moss, grass, dwarf shrubs, etc are starting to catch fire.
- Nearly all of this year's fires inside the Arctic Circle occurred on continuous permafrost, with over half of these **burning on ancient carbon-rich peat soils**.
- The fires and record temperatures had the potential of **turning the carbon sink into a carbon source** and increasing global warming.
- The issue was so important to the climate system that it had to be taken up as an issue of global importance. The study urged global cooperation, investment and action in monitoring fires.
- It called for learning from the indigenous peoples of the Arctic about how fire was traditional used. It said that **new permafrost- and peat-sensitive approaches** to wildland fire fighting were needed to save the Arctic.

Xoo Infection

Scientists from Centre for Plant Molecular Biology (CPMB), Hyderabad have **uncovered the mechanism** by which a **bacterium called Xoo**, that causes a serious bacterial **leaf blight disease in rice**, interacts with rice plant and cause disease. Xoo infection **cause huge yield losses to rice cultivation** throughout the world.

Disease Control Strategy

- The team is developing new disease control strategies which they can use as **vaccines that activate the rice immune system** and provide resistance to rice plants from subsequent infections by pathogens.



- **Cellulase protein:** The team is working on a cellulase protein, a cell wall degrading enzyme secreted by Xoo. This cellulase protein has the features of a typical vaccine as it is a potent elicitor of rice immune responses. Pre-treatment of rice plants with this protein provides resistance to rice against subsequent Xoo infection.
- **Resistance “R” genes:** So far, the best way to control this disease was improving the resistance of rice plants by introducing Resistance “R” genes. But this method involves breeding or gene manipulation techniques that are laborious and time-consuming. Also, the introduced of “R” genes **provide only race-specific resistance that will prevent infections by only specific strains of Xoo.**
- But the elicitor molecule that will be identified in this new work will have the potential to induce a **broad-spectrum resistance**, which will be effective not only against Xoo but also against other pathogens.

Graded Response Action Plan (GRAP)

The Environment Pollution (Prevention & Control) Authority (EPCA) has directed Delhi and neighbouring States to implement air pollution control measures under “very poor” and “severe” category air quality of the **Graded Response Action Plan (GRAP)** from October 15.

About GRAP

- **Approved by the Supreme Court in 2016**, GRAP was notified in 2017 by the Centre and draws its authority from this notification. The action plan has been **in effect for three years** in Delhi and NCR.
- **GRAP works only as an emergency measure.** As such, the plan does not include action by various state governments to be taken throughout the year to tackle industrial, vehicular and combustion emissions.
- **The plan is incremental in nature** — therefore, when the air quality moves from ‘Poor’ to ‘Very Poor’, the measures listed under both sections have to be followed.
- **If air quality reaches the ‘Severe+’ stage**, the GRAP includes extreme measures such as shutting down schools and implementing the odd-even road-space rationing scheme.
- The plan requires action and coordination among 13 different agencies in Delhi, Uttar Pradesh, Haryana and Rajasthan (NCR areas). **Before the imposition of any measures, EPCA holds a meeting with representatives from all NCR states**, and a call is taken on which actions have to be made applicable in which town.
- **GRAP has been successful in doing two things**— creating a step-by-step plan for the entire Delhi-NCR region, and getting on board several agencies: all pollution control boards, industrial area authorities, municipal corporations, regional officials etc.

Fight against pollution
A look into the city's Graded Response Action Plan to fight air pollution

<p>STAGE 1 MODERATE-TO-POOR QUALITY AIR (PM2.5 above 61µg/m3 or PM10 above 101µg/m3)</p> <ul style="list-style-type: none"> ● Mechanized sweeping, washing roads with water ● Enforcing ban on firecrackers, increased scrutiny of vehicles for pollution standards 	<p>STAGE 2 VERY POOR AIR (PM2.5 above 121 µg/m3 or PM10 above 351 µg/m3)</p> <ul style="list-style-type: none"> ● Ban on diesel generators ● Parking fee to surge by 3-4 times ● Stop use of coal/firewood in eateries ● Urge people with respiratory or cardiac problems to stay inside 	<p>STAGE 4 EMERGENCY (also known as severe+, PM2.5 above 300 µg/m3 or PM10 above 500 µg/m3)</p> <ul style="list-style-type: none"> ● Ban entry of trucks (except for essential items) ● Halt construction work ● Begin odd-even road scheme for private vehicles
<p>BEGINNING FROM OCT 15 Some of these measures will already kick in from October 15. These are:</p>		
<p>1 BAN ON DIESEL GENERATORS</p>	<p>2 WASHING OF ROADS</p>	<p>3 NIGHT PATROLS AT HOT SPOTS</p>

Earthshot Prize

- Britain's Prince William, the Duke of Cambridge, launched a new 50-million pound Earthshot Prize, aimed at **funding the most innovative solutions to some of the world's most pressing environmental challenges**.
- Five prizes worth 1 million pounds each will be awarded each year for the next 10 years, providing at least 50 solutions to the world's greatest environmental problems by 2030.
- The Earthshot Prize is centred around **five "Earthshots"**, the ambitious goals which if achieved by 2030 will improve life for us all, for generations to come. The five Earthshots unveiled include **protect and restore nature; clean our air; revive our oceans; build a waste-free world; and fix our climate**.

ENFUSER (ENvironmental information FUsion SERvice)

- The India Meteorological Department has operationalised an **advanced high-resolution air quality early warning system- ENFUSER** for the national capital.
- The speciality of the ENFUSER is the high utilization of measurement data such as air quality observations, a **detailed description of the road network, buildings, land-use information, high resolution satellite images**, ground elevation and population data.
- The ENFUSER natively taps into the operative IMD's regional **System for Integrated modelling of Atmospheric composition (SILAM)**, which is meant for the entire country. The ENFUSER results are being evaluated with the satellite measurements and observations, model is found to capture the hotspots over Delhi very well.
- SILAM and ENFUSER have been developed in **technical collaboration with Finnish Meteorological Institute (FMI)**.

Kaleshwaram Lift Irrigation System (KLIS)

The environmental clearance, granted to the Kaleshwaram project on December 22, 2017 by the Ministry of Environment, Forests and Climate Change, was cancelled by the National Green Tribunal on October 12, 2020.

What Is Kaleshwaram Lift Irrigation Project?

- KLIS is considered to be one of the **world's largest multi-purpose projects**. It is designed to provide water for irrigation and drinking purposes to about 45 lakh acres in 20 of the 31 districts in Telangana, apart from Hyderabad and Secunderabad.
- The cost of the project is Rs 80,000 crore, but is expected to rise to Rs 1 lakh crore by the time it is completely constructed by the end of 2020.

Uniqueness Of The Project

- This project is unique because Telangana will harness water at the **confluence of two rivers with Godavari** by constructing a barrage at Medigadda in Jayashankar Bhupalpally district and reverse pump the water into the main Godavari River and divert it through lifts and pumps into a huge and complex system of reservoirs, water tunnels, pipelines and canals.
- The project has set many records with the **world's longest water tunnels, aqueducts, underground surge pools, and biggest pumps**. By the time the water reaches Kondapochamma Sagar, the last reservoir in the system, the Godavari water would have been lifted to a height of 618 metres from its source at Medigadda.

- The total length of the entire Kaleshwaram project is approximately 1,832 km of which 1,531 km is gravity canals and 203 km comprise water tunnels. There are 20 water lifts and 19 pump houses in the project.

Significance of KLIS to Telangana

- **Year-round supply of water:** Kaleshwaram will transform Telangana into an agricultural powerhouse. The project will enable farmers in Telangana to reap multiple crops with a year-round supply of water wherein earlier they were dependent on rains resulting in frequent crop failures. This year, Telangana farmers have already delivered bumper rabi crops of paddy and maize due to better irrigation facilities and an extended monsoon.
- **Covering rainfall deficit districts:** KLIS covers several districts which used to face rainfall deficit and the groundwater is **fluoride-contaminated**.
- **Supply of drinking water:** Apart from providing water for irrigation to 45 lakh acres, a main component of the project is supply of drinking water to several towns and villages and also to twin cities of Hyderabad and Secunderabad.
- **Mission Bhagiratha**, the Rs 43,000-crore project to supply drinking water to every household in villages, draws a large quantity of water from the KLIS and some quantity from projects on River Krishna.
- **Boost to water fishing industry:** There is a burgeoning fresh water fishing industry in the state as the numerous water bodies created under the project are also being used to grow fish and locals are given rights to fish and sell.

Recent Order Of The National Green Tribunal

- The Principal Bench of NGT ruled that the Environmental Clearance given to the project was **void** as Telangana government subsequently **changed the design** of the project to increase its capacity.
- The NGT observed that by **increasing its capacity to pump 3 TMC water from 2 TMC**, which was originally planned, major changes were made in the project due to which large tracts of forest land and other land was taken over and massive infrastructure was built causing adverse impact on the environment.
- The Telangana Government's argument that the expansion of the project to extract 3 TMC instead of 2 TMC **did not involve any infrastructural changes** and therefore a fresh environment clearance was not required, *was not accepted by the NGT*. Extraction of more water certainly requires more storage capacity and also **affects hydrology and riverine ecology of Godavari River**.
- The NGT also directed the Ministry of Environment to **constitute a seven-member Expert Committee** within a month to assess the extent of damage caused in going ahead with the project's expansion and **identify the restoration measures necessary**.
- The NGT also directed the Telangana Government to stop all work except the drinking water component and obtain a Forest Clearance from the Centre before going ahead with the project.

New Ramsar Sites

- **Kabartal**, a freshwater marsh of **North Bihar** and **Asan Barrage** in Doon Valley of **Uttarakhand**, were designated as Ramsar Sites, making them '**Wetland of International Importance**'.
- With this, the **number of Ramsar sites in India goes up to 38**, the highest in South Asia and Uttarakhand gets its first Ramsar site.

Kabartal

- **Kabartal**, also known as Kanwar jheel covers 2,620 hectares of the Indo-Gangetic plains, in Begusarai district of the state of Bihar.

- The site acts as a vital flood buffer for the region besides providing livelihood opportunities to the local communities. As a habitat to biodiversity, the wetland supports about 165 plant, 394 animals and around 50 fish species.
- Kabartal is also an **important stopover along the Central Asian Flyway**, with 58 migratory waterbirds using it as a wintering site.
- Besides, **critically endangered vultures including red-headed vulture and white-rumped vulture also use the site as a habitat.**

Asan Conservation Reserve

- Asan Conservation reserve is a **444-hectare stretch of the Asan River running down to its confluence with the Yamuna River** in Dehradun district of Uttarakhand.
- The site is a biodiversity hub that supports 330 species of birds including the **critically endangered redheaded vulture (*Sarcogyps calvus*), white-rumped vulture (*Gyps bengalensis*) and Baer's pochard (*Aythya baeri*).**
- **This man-made wetland** possibly attracts the biggest number of **Brahminy Duck or Ruddy Shelduck in the entire India.**
- It also supports large congregations of migratory birds like red-crested pochard, Pintail, Gadwall, Common Pochard, Mallard, Coot etc and is a known feeding, spawning and migrating site for over 40 fish species.

Significance of Wetlands

- The Ramsar Convention definition for wetlands includes **marshes, floodplains, rivers and lakes, mangroves, coral reefs and other marine areas no deeper than 6 metres at low tide**, as well as human-made wetlands such as waste-water treatment ponds and reservoirs.
- The IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) global assessment identified **wetlands as the most threatened ecosystem**. This **impacts 40% of the world's plant and animal species that live or breed in wetlands**, according to UNESCO.
- **Thirty per cent of land-based carbon is stored in peatland**; one billion people depend on wetlands for their livelihoods; and **wetlands provide \$47 trillion in essential services annually.**
- **India has a total of 7,57,060 wetlands**, covering 1.6 crore hectares or **4.5% of India's area**. In India, wetlands are regulated under the **Wetlands (Conservation and Management) Rules, 2017.**

Ramsar Sites

- It is one of the crucial pillars of **Ramsar Convention**, the **only multilateral intergovernmental environmental agreement focussed on wetlands.**
- It was **adopted in 1971 in the Iranian city of Ramsar**, on the southern shore of the Caspian Sea.
- The Convention on Wetlands **came into force for India on February 1, 1982.** Those wetlands which are of international importance are declared as Ramsar sites.
- The vision for creating this **Ramsar Sites** list is to 'develop and maintain an international network of wetlands which are important for the conservation of global biological diversity and for sustaining human life through the maintenance of their ecosystem components, processes and benefits/services'.
- Wetlands can be designated to Ramsar List under any (one or more) of the **9 criteria** that ranges from uniqueness of the site to those based on species and ecological communities supported.

The Montreux Record

- Montreux Record is a register of wetland sites on the List of Wetlands of International Importance where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference.

- It is **maintained as part of the Ramsar List**.
- Currently, two wetlands of India are in Montreux record: **Keoladeo National Park (Rajasthan) and Loktak Lake (Manipur)**. Chilka Lake (Odisha) was placed in the record but was later removed from it.

Translocation Of Corals In Mumbai

- Mumbai civic body received the green signal from the Principal Chief Conservator of Forests (Wildlife), Nagpur, for **translocating the corals off the coast of Mumbai** for the Rs 12,700-crore **Mumbai Coastal Road Project**.
- The Mumbai coast hosts a tiny population of corals. The corals found across rocky patches along the Mumbai coastline are mostly **fast-growing and non-reef building corals**.

How Are Corals Translocated

- The translocation of corals is at a **nascent stage along the Indian coastline**. Pilot projects at the Lakshadweep islands, and off the coast of Kutch and Tamil Nadu have been undertaken to study the survival rate, method and site of translocation, and creation of high heat-resistant coral colonies, etc.
- In a three-year-long project in Sindhudurg, corals were cultivated — **fragments of corals were taken and attached to concrete frames with the help of nylon threads** — and then left on ocean beds at a depth suitable for their growth.
- In a project at the Andaman islands, ReefWatch Marine Conservation has transplanted coral fragments on to nine artificial structures, totalling a 20-square-metre area. The project has been on since 2017.
- **Growth Rate:** According to the National Oceanic and Atmospheric Administration (NOAA), the **rate at which corals grow depends on the species**. A soft coral colony has the potential to grow at the rate of 2 cm to 4 cm per year.
- **Survival rate of translocated corals:** Experts are of the view that for a high survival rate, it is important to translocate corals in a place with similar environmental characteristics such as depth, current flow, amount of light, and pressure.

To read more about Coral Reefs, its significance, coral bleaching etc. please refer September Recitals.

Seagrasses

Recent study suggests that Protection and restoration of seagrasses can play a significant role in mitigating climate change.

What is Seagrass

- Seagrasses are **flowering plants that grow submerged in shallow marine waters like bays and lagoons**. With tiny flowers and strap-like or oval leaves, they require sunlight for photosynthesis.
- Terrestrial plants evolved about 850 million years ago from a group of green algae. **Seagrasses evolved from terrestrial plants** that recolonised the ocean 70-100 million years ago. There are 60 species belonging to four families in the **order Alismatales**.
- **Seagrasses occur all along the coastal areas of India**. They are abundant in the Palk Strait and Gulf of Mannar in Tamil Nadu.
- Like terrestrial plants, seagrass also **photosynthesise and manufacture their own food and release oxygen**.
- Seagrasses **reproduce through both sexual and asexual methods**.

- The pollen from the flower of the male plant is transferred to the ovary of the female flower through the sexual reproduction method. This is known as **submarine pollination**. Most species undergo this process and complete their life cycle underwater.
- Seagrasses can also **reproduce asexually by branching off at their rhizomes** (modified subterranean plant stem that sends out roots and shoots from its nodes). Because of this character, they can recover after being cut by grazers like dugongs or disturbed by storms.

Significance of Seagrass

- Seagrasses are known for providing many ecosystem services and are considered to be '**Ecosystem Engineers**'.
- **Seagrasses help maintain water quality**: They trap fine sediments and suspended particles in the water column and increase water clarity. In the absence of seagrass communities, the sediments are stirred by wind and waves, decreasing water quality. This reduced water clarity affects marine animal behaviour besides decreasing the recreational quality of coastal zones.
- **Stabilize the sea bottom**: Ocean bottoms without seagrasses are prone to intense wave action from currents and storms. The extensive vertical and horizontal root systems of seagrasses stabilise the sea bottom similar to land grasses that prevent soil erosion.
- **Protecting Marine Animals**: Seagrass habitats protect juvenile and small adult fish from large predators. Marine animals that live in soft sea bottom sediments also take shelter in seagrass meadows. Seagrasses protect worms, crabs, starfishes, sea cucumbers, sea urchins, etc, from strong currents. Seagrass leaves support seaweeds by providing anchoring facilities.
- **Provides food and habitat**: Seagrasses provide food as well as habitat for fishes, octopuses, shrimp, blue crabs, oysters, sponges, sea urchins, clams, etc. They are called '**the lungs of the sea**' as they release oxygen into the water through photosynthesis. Some endangered marine organisms like dugong, green turtle, etc, graze directly on seagrass leaves. Many other microorganisms take the nutrients indirectly from seagrasses.
- **Carbon sequestration**: Even though seagrasses occupy only 0.1 per cent of the ocean floor; they sequester up to 11 per cent of the organic carbon buried in the ocean. Seagrasses absorb 83 million tonnes of carbon from the atmosphere annually.
- **Seagrasses were used as fertiliser** for sandy soil. During the 20th century, the dried grasses had been used as mattresses in France. There was high demand for seagrasses by French forces during World War I. The grasses had been used for bandages also.

Threats

- Seagrass beds are facing decline all over the world at the rate of 2-5 per cent annually. Some 30,000 square kilometres of seagrass has been lost during recent decades at a global level.
- Seagrasses face natural disturbances like **grazing, storms, ice-scouring and desiccation**. Human disturbances like **eutrophication, mechanical destruction of habitat, overfishing** and release of nutrients play havoc on seagrasses.
- **Siltation, trawling, coastal engineering construction, pollution**, etc, are considered to be significant causes for the deterioration of seagrasses. Sea Cow (Dugong) and Green Turtle that depend on seagrass for their food also face a severe threat.

Way forward

- **The International Union for the Conservation of Nature** should intervene immediately and study the status of the different seagrass species before they become extinct.
- Protection and restoration of seagrasses can play a **significant role in mitigating climate change**. Hence restoration of seagrasses should be attempted at the global level.

- Restoration of seagrasses has been taken up by the Tamil Nadu Forest Department in the Gulf of Mannar also and the results have been found to be encouraging.
- If seagrass habitats are lost, the marine organisms that depend on them for their survival may also face extinction, resulting in the loss of marine ecosystem productivity. Hence there is an **urgent need to take earnest measures to conserve seagrasses and their habitats.**

World Habitat Day 2020

- In 1985, The United Nations designated the first Monday of October of every year as World Habitat Day to reflect on the state of our towns and cities, and on the basic right of all to adequate shelter.
- **2020 Theme:** Housing For All — A Better Urban Future.
- World Habitat Day was first celebrated in 1986 with the theme “**Shelter is My Right**”.

Nitrous Oxide Emissions

- Human emissions of nitrous oxide (N₂O) — a greenhouse gas **300 times more potent than carbon dioxide (CO₂) — increased by 30 %** between 1980 and 2016, according to a research paper.
- The research was conducted through an international collaboration between the **International Nitrogen Initiative (INI) and the Global Carbon Project of Future Earth**, a partner of the World Climate Research Programme.

Findings Of The Study

- Nitrous oxide has the **third-highest concentration — after CO₂ and methane** — in our atmosphere among greenhouse gases responsible for global warming. N₂O can **live in the atmosphere for up to 125 years.**
- Its global concentration levels **increased from 270 parts per billion (ppb) in 1750 to 331 ppb in 2018 — a jump of 20 %.** The growth has been the quickest in the past five decades because of human emissions.
- This is the most comprehensive study of global nitrous oxide emissions ever published, as it **combines both natural and anthropogenic (man-made) sources.** The study, which analysed 21 natural and human sources of N₂O, found that **43 % of the total emissions came from human sources.**
- The increase in its emissions means that the **climatic burden on the atmosphere is increasing from non-carbon sources as well**, while the major focus of global climate change negotiations is currently centred on carbon, its emissions and mitigation.
- It found that a major proportion of the N₂O emissions in the last four decades came from the **agricultural sector, mainly because of the use nitrogen-based fertilisers.** There is a conflict between the way we are feeding people and stabilising the climate.
- The good news is that there **are well-established practices and technologies** to mitigate nitrous oxide emissions. Industrial and agricultural policies in Europe reduced such emissions considerably. **India had led the first-ever nitrogen resolution** adopted in the fourth UN Environment Assembly with the help of INI.

International Nitrogen Initiative(INI)

- 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).
- The **key aims** of the INI are to:
 - 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.
- INI is coordinated by a Steering Committee, led by a chair and six regional centre directors representing, Africa, Europe, Latin America, North America, South Asia and East Asia.

The Global Carbon Project

- It is a Global Research Project of Future Earth and a research partner of the World Climate Research Programme.
- It was formed to work with the international science community to establish a common and mutually agreed knowledge base to support policy debate and action to slow down and ultimately **stop the increase of greenhouse gases in the atmosphere.**
- **It was established in 2001** by a shared partnership between the International Geosphere-Biosphere Programme (IGBP), the International Human Dimensions Programme on Global Environmental Change (IHDP), the World Climate Research Programme (WCRP) and Diversitas.
- This partnership constituted the Earth Systems Science Partnership (ESSP) which subsequently evolved into Future Earth.

Yuddh Pradushan Ke Virudh

- Delhi Chief Minister has launched **an anti-air pollution campaign** named "Yudh Pradushan Ke Virudh" to keep a check on the air pollution levels in the national capital.
- Under the campaign, **separate plans have been prepared for each of the 13 pollution hotspots** in the city. The state government is also setting up dedicated war rooms to monitor the implementation of the anti-pollution measure in the city

7-Step Action Plan to tackle Air Pollution in Delhi

The infographic consists of seven colored boxes, each with an icon and text describing an action plan step:

- COMBATING DUST** (Red box): All road owning agencies asked to fill potholes and commence mechanical sweeping of roads. Anti-smog guns will be used. All construction sites to be frequently inspected by pollution officials.
- HOTSPOT MANAGEMENT** (Green box): Area-specific pollution control measures to be implemented in all 13 hotspots of Delhi.
- SETTING UP OF A GREEN APP** (Green box): A dedicated mobile app to be launched this month for people to register complaints against violation of pollution norms. People will be able to click pictures and put it up on the app.
- WAR ROOM SET UP** (Red box): A war room has been set up on the seventh floor of Delhi Secretariat in ITO. All pollution control activities will be monitored in this room.
- NEW TREE TRANSPLANTATION POLICY** (Green box): The new policy — to be passed by the Cabinet in 10 days — will mandate agencies to plant 10 saplings for every tree chopped. It will also require transplantation of 80% of trees.
- ACTION AGAINST STUBBLE BURNING** (Red box): Indian Agricultural Research Institute has come up with a liquid solution that can convert stubble into manure. Delhi govt will provide the solution to farmers for free.
- ENCOURAGING ELECTRIC VEHICLES** (Green box): The government will soon start rolling out subsidies under the notified Electric Vehicle Policy.

Commission for Air Quality Management in National Capital Region (NCR)

- The central government **notified an Ordinance to constitute a Commission for Air Quality Management** in the National Capital Region (NCR) and Adjoining Areas.
- Through the Ordinance, the Centre has **dissolved the Environment Pollution (Prevention and Control) Authority (EPCA)** for the NCR. The new Commission would have more powers than the EPCA – in terms of penal provisions as well as in its constitution and scope.

Why Has The Central Government Set Up This Commission

- **The monitoring and management of air quality in Delhi NCR region has been done piecemeal by multiple bodies** including the Central Pollution Control Board (CPCB), the state pollution control boards, the state governments in the region and the EPCA of the National Capital Region.
- They in turn are monitored by the Union Ministry of Environment and Forests and Climate Change (MoEF), and the Supreme Court itself, which monitors air pollution as per the judgment in '**M C Mehta vs Union of India**', 1988.
- The Ordinance seeks to **create an overarching body to consolidate all monitoring bodies, and to bring them on one platform** so air quality management can be carried out in a more comprehensive, efficient, and time-bound manner.

Composition of The Commission

- The Commission, which will be a permanent body, **will have over 20 members**, and will be chaired by a retired official of **the level of Secretary to Government of India or Chief Secretary of a state**.
- It will include a representative of the Secretary of the MoEF, five Secretary level officers who will be ex officio members, and two joint secretary level officers who will be full-time members.
- The Commission will also have **representation from the CPCB, ISRO, air pollution experts**, and three representatives of non-government organisations (NGOs). As associate members, the Commission will have representatives from various other Ministries including the Ministries of Agriculture, Petroleum, Power etc.

Powers and Functions of the Commission

- In matters of air pollution and air quality management, the **Commission will supersede all existing bodies such as the CPCB**, and even the state governments of Haryana, Punjab, Rajasthan, and Uttar Pradesh.
- It will have the **powers to issue directions to the states** and it will now be **binding on state governments to follow the directions** of the Commission regarding air quality management. The Commission will also coordinate efforts of state governments to curb air pollution, and **will lay down the parameters of air quality for the region**.
- It will have **powers to restrict the setting up of industries in vulnerable areas**, and will be able to conduct site inspections of industrial units.
- **Penal powers:** If its directions are contravened, through say, the setting up of an industrial unit in a restricted area, the Commission will have the **power to impose a fine of up to Rs 1 crore and imprisonment of up to 5 years**.
- It will also **facilitate more effective implementation** as the permanent Commission envisages a multi-sectoral, public participatory, multi-state dynamic body for combating pollution.

International Barcode of Life (iBOL)

- The Union Cabinet approved a Memorandum of Understanding between India's Zoological Survey of India (ZSI) and **Canada's not-for-profit organisation** International Barcode of Life (iBOL).
- **iBOL is a research alliance** involving nations that have committed both human and financial resources to enable expansion of the global reference database, the development of informatics platforms, and/or the analytical protocols needed to use the reference library to inventory, assess, and describe biodiversity.
- ZSI and iBOL have come together to further efforts in **DNA barcoding, a methodology for rapidly and accurately identifying species** by sequencing a short segment of standardized gene regions and comparing individual sequences to a reference database.

- The MoU will enable ZSI to participate at the Global level programmes like Bioscan and Planetary Biodiversity Mission.

Tree Transplantation Policy

The Delhi Cabinet has approved the 'Tree Transplantation Policy' for the preservation of trees in the Capital.

Key Features Of The Policy

- The policy makes it **mandatory for 80% of the trees which are to be felled for any development project to be transplanted elsewhere**. Also, 80 percent of the trees have to be transplanted to a new site and their survival has to be ensured for a year.
- These are in **addition to the existing rules of compensatory forestation** for any construction activity in the national capital.
- The policy, however, **will not apply to individuals or private organizations if 10 or a lesser number of trees are to be cut** for any project. However, the compensatory plantation requirement of 10:1 shall continue to remain applicable in this case.
- Under the policy, the government is planning on **people's participation** as a major component to protect the local ecology.
- Department of Forests and Wildlife will constitute local committees comprising of experts, citizen groups, and others. These committees, will be responsible to carry out **regular monitoring of all projects** regarding tree transplantation of more than 100 trees.
- To have more transparency in the process, the department of forests will have to detail and update records on its website every month on all applications for tree felling.

Decarbonization and Energy Transition Agenda

- **NITI Aayog and Embassy of Netherlands**, New Delhi, signed a Statement of Intent (Sol) to support the decarbonization and energy transition agenda for accommodating cleaner and more energy.
- The focus of the partnership is on **co-creating innovative technological solutions by leveraging the expertise of the two entities**. This will be achieved through an exchange of knowledge and collaborative activities. The key elements include
 - **Lowering the net carbon footprint** in industrial and transport sectors
 - **Realize the target potential of natural gas** and promote bio-energy technologie
 - **Adopt clean air technologies** from monitoring to reducing actual particulates
 - **Adopt next-generation technologies**, such as hydrogen, carbon capture utilization, and storage for sectoral energy efficiency
 - **Financial frameworks** to deliver and adopt climate change finance.
- The Netherlands and India share a long history of trade and investment. It is **India's sixth largest EU trading partner** and also the **third largest source of Foreign Direct Investment for India**.

Ecosystem Services

- An assessment by the The Energy and Resources Institute (TERI) has found that the annual **economic value of ecosystem services provided by the Delhi zoo is ₹426 crore**.
- An ecosystem service is **any positive benefit that wildlife or ecosystems provide to people**. The benefits can be direct or indirect—small or large.

- These 'ecosystem services' constitute heads such as **biodiversity conservation, employment generation, education and research, carbon sequestration** and recreational and cultural contributions.

Significance Of The Study

- It is a '**first-of-its-kind**' study in India and gave a "powerful baseline assessment" of the important ecosystem services provided by the zoo.
- These estimates could be used to **compute value provided by zoos across India.**
- The way forward is to have an in-depth valuation of those ecosystem services which are not being valued due to limited time and resource.

Massive Habitat Decline For Himalayan Brown Bear

- A recent study carried out by scientists of Zoological Survey of India predicted a **massive habitat decline of about 73% for the Himalayan brown bear by 2050** due to climate change.
- These losses in habitat will also result in loss of habitat from 13 protected areas (PAs), and eight of them will become completely uninhabitable by the year 2050, followed by loss of connectivity in the majority of PAs.
- In such a situation when the protected areas in the Himalayan region lose their effectiveness and representativeness, there is a need to adopt "**preemptive spatial planning of PAs in the Himalayan region** for the long-term viability of the species.

About Himalayan Brown Bear

- India has four species of bears: Asiatic Black, Sloth, Sun and Himalayan Brown Bear. The Himalayan brown bear is **one of the largest carnivores in the highlands of Himalayas.**
- **Range:** North-western and central Himalaya, including Pakistan, India, Nepal, the Tibetan Autonomous Region of China and Bhutan. Populations are present in the Great Himalayan National Park (Himachal Pradesh) and the Deosai National Park, Pakistan.
- **Habitat:** High altitude open valleys and pastures. During the summer months the bears move up as high as the snow-line at around 5,500 metres and then descend into the valleys in the autumn. Himalayan brown bears seem to be arguably the least arboreal of all the bear subspecies.
- **Status:** The IUCN list Himalayan brown bears as **Least Concern**, and they are listed under Schedule 1 of the Indian Wildlife (Protection) Act of 1972.
- **Threats:** Habitat loss, killing by livestock herders, and poaching for fur and for the illegal body parts trade. In Pakistan there are the additional threats of habitat insularisation and bear baiting. Overall, the population is in decline



International Snow Leopard Day

- **October 23** is celebrated as World's Snow Leopard Day every year to protect and conserve snow leopards and other wildlife of the Himalayas.
- Government is committed to **landscape restoration for snow leopard habitat conservation**, and implementing



participatory landscape-based management plans. India has identified three large landscapes, namely,

- **Hemis-Spiti** across Ladakh and Himachal Pradesh;
- **Nanda Devi** – Gangotri in Uttarakhand; and
- **Khangchendzonga – Tawang** across Sikkim and Arunachal Pradesh.

Project Snow Leopard (PSL)

- Government of India has been conserving snow leopard and its habitat through the **Project Snow Leopard**. The PSL was **launched in 2009**.
- **Objectives of Project Snow Leopard (PSL)**
 - **Facilitate a landscape-level approach to wildlife conservation:** Since wildlife populations in the Himalayan high altitudes are not restricted to protected areas, a landscape-level conservation approach is needed.
 - **Rationalize the existing protected area network** and improve protected area management.
 - **Develop a framework for wildlife conservation outside protected areas** and promote ecologically responsible development.
 - **Promote better understanding** and management of human-wildlife conflicts.
 - **Restore degraded landscapes** in the high altitude Himalayan and Trans-Himalayan biogeographic regions.

To read more about Snow Leopard and Global Snow Leopard and Ecosystem Protection Program (GSLEP) refer August Recitals.

New Plant Species Discovered In Western Ghats

- Scientists from the Agharkar Research Institute in Pune have recently discovered **two new species of pipeworts** in the Western Ghats of Maharashtra and Karnataka.
- The species reported from Maharashtra has been named **Eriocaulon parvicephalum** (due to its minute inflorescence size), and the other reported from, Karnataka is called **Eriocaulon karaavalense** (named after Karaavali, Coastal Karnataka region).
- **Pipeworts (Eriocaulon)** is a plant group which **completes its life cycle within a small period during monsoon**. It exhibits great diversity in the Western Ghats.
- **Around 111 species of pipeworts are found in India**. Most of these are reported from the Western Ghats and the eastern Himalayas, and around **70% of them are endemic to the country**.
- **Eriocaulon cinereum**, is well known for its anti-cancerous, analgesic, anti-inflammatory, and astringent properties. **E. quinquangulare** is used against liver diseases. **E. madayiparense** is an anti-bacterial from Kerala.
- The medicinal properties of the newly discovered species are yet to be explored.



Eriocaulon karaavalense



Eriocaulon parvicephalum

Skinks

- A recent publication by the Zoological Survey of India (ZSI) reveals that **India is home to 62 species of skinks** and says about 57% of all the skinks found in India (**33 species**) are endemic.

- Skinks are lizards that belong to the **family Scincidae**, one of the most diverse families of lizards with over 1,500 species described.
- With long bodies, relatively **small or no legs**, no pronounced neck and glossy scales, skinks are **common reptiles** around homes, and open spaces. Skinks are highly alert, agile and fast moving and actively forage for a variety of insects and small invertebrates.
- The reduced limbs of certain skink species or the complete lack of them make their **slithering movements resemble those of snakes**, leading people to have incorrect notion that they are venomous. This results in several of these harmless creatures being killed.
- Although they are common reptiles and have a prominent role in maintaining ecosystems, **not much is known about their breeding habits, and ecology** because identification of the species can be confusing. While a lot of work is done on other groups of reptiles like snakes or geckos, skinks are an ignored species.



Dairy Production In Indus Valley Civilisation

- The year 2020 marks 100 years of discovery of Indus Valley Civilisation, and a new study has shown that dairy products were being produced by the Harappans as far back as 2500 BCE.
- A study published in the journal Nature presents the earliest direct evidence of dairy product processing, thus throwing fresh light on the rural economy of the civilisation.
- The study is based on archaeological finds from the Kotada Bhadli settlement — located in modern day Gujarat's Kutch district. It was an agro-pastoral settlement in the Indus Valley civilisation, occupied from the mid to the late third millennium BCE.
- The researchers used molecular analysis techniques to study the residues from ancient pottery. Pots are porous, so as soon as any liquid form of food is put in it, it absorbs it. The pot preserves the molecules of food such as fats and proteins.
- The team was also able to show which type of animals were being used for dairy production. They studied the tooth enamel from fossils of cattle, water buffalo, goat and sheep found in the area.
- A preliminary study suggested that most of the cattle and water-buffalo died at an older age, suggesting they could have been raised for milk, whereas the majority of goat/sheep died when they were young, indicating they could have been used for meat.

Kochi-Muziris Biennale

- The fifth edition of the Kochi-Muziris Biennale has been postponed to November 2021 due to the prevailing pandemic in Kerala. The international art exhibition was earlier scheduled to be held from December, 2020 onwards.
- The Kochi-Muziris Biennale is an international exhibition of contemporary art held in the city of Kochi. It is an initiative of the Kochi Biennale Foundation with support from the Government of Kerala.

Muziris

- In mythology, Muziris was an ancient harbour and urban centre on the Malabar Coast. When Kerala established itself as a major centre for spice, it was the ancient port of Muziris that emerged as its hub.

- Muziris was a key to the interactions between South India and Persia, the Middle East, North Africa, and the (Greek and Roman) Mediterranean region.
- Sangam literature describes Roman ships coming to Muziris laden with gold to be exchanged for pepper.

Life In A Miniature Project

- The **Ministry of Culture** recently launched the “Life in Miniature” project. The project is a collaboration between the National Museum, New Delhi and Google Arts & Culture.
- Hundreds of miniature paintings from the National Museum’s collections can now be seen through the Google Arts & Culture app.
- The project uses technologies such as machine learning, augmented reality and digitisation with high-definition robotic cameras, to showcase these special works of art.
- **Google Arts & Culture** is an online platform through which public can view high-resolution images and videos of artworks and cultural artefacts of more than 2,000 museums throughout the world.

Nobel Prize in Literature

- The Nobel Prize for Literature 2020 has been awarded to American poet and essayist Louise Glück.
- Upon conferring her the honour, the Swedish Academy praised her writing style for her poetic voice that makes individual existence universal.

International Day of Older Persons

- The International Day of Older Persons was recently celebrated on 1st October. This year marks the 30th year of the celebration of the day.
- In December 1990, the United Nations General Assembly designated 1 October the International Day of Older Persons. Later, in 1991, the General Assembly adopted the United Nations Principles for Older Persons.
- This was preceded by initiatives such as the Vienna International Plan of Action on Ageing – which was adopted by the 1982 World Assembly on Ageing – and endorsed later that year by the UN General Assembly.
- The 2020 observance will also promote the Decade of Healthy Ageing (2020-2030) and help bring together UN experts, civil society, government and the health professions around this issue.
- The theme of the 2020 commemoration is “Pandemics: Do They Change How We Address Age and Ageing?”. The 2020 theme aims to:

Significance Of The Day

- Already, there are more than 1 billion people aged 60 years or older, with most living in low- and middle-income countries.
- Many do not have access to even the basic resources necessary for a life of meaning and of dignity. Many others confront multiple barriers that prevent their full participation in society.
- Over the next three decades, the number of older persons worldwide is projected to more than double, reaching more than 1.5 billion persons in 2050.
- Population ageing is poised to become one of the most significant social transformations of the twenty-first century, with implications for nearly all sectors of society.
- These include labour and financial markets, the demand for goods and services, such as housing, transportation and social protection, as well as family structures and intergenerational ties.

Gyan Circle Ventures

- The Ministry of Education recently inaugurated the Gyan Circle Ventures (GCV). GCV is a MeitY funded Technology Business Incubator (TBI) of Indian Institute of Information Technology, Chittoor, Andhra Pradesh.
- The incubator would leverage the institutions' entrepreneurial spirit via utilizing its intellectual capital and engage in using emerging technologies such as Artificial Intelligence (AI), Block-chain, Cyber Physical Systems (CPS), Cyber Security, Internet of Things (IoT), Robotics, etc.
- It will serve as a hub for innovation and startups by providing support, in various phases, via investments, infrastructure and mentoring.
- Notably, the TBI would have an Advisory Committee comprising leading Industrialists, entrepreneurs and technical experts. It would enable incubatees to leverage these expert mentors and networks from both academia and the industry.
- It is hoped that the incubator will serve as a catalyst for the advancement of society-conscious entrepreneurship and fuel job creation.