

1. Water can dissolve more substances than any other liquid because
- (a) it is dipolar in nature
 - (b) it is a good conductor of heat
 - (c) it has high value of specific heat
 - (d) it is an oxide of hydrogen

Answer: (a)

Explanation: Water is capable of dissolving a variety of different substances, which is why it is such a good solvent. And, water is called the "universal solvent" because it dissolves more substances than any other liquid. This is important to every living thing on earth. It means that wherever water goes, either through the ground or through our bodies, it takes along valuable chemicals, minerals, and nutrients.

It is water's chemical composition and physical attributes that make it such an excellent solvent. Water molecules have a polar arrangement of the oxygen and hydrogen atoms—one side (hydrogen) has a positive electrical charge and the other side (oxygen) had a negative charge. This allows the water molecule to become attracted to many other different types of molecules. Water can become so heavily attracted to a different molecule, like salt (NaCl), that it can disrupt the attractive forces that hold the sodium and chloride in the salt molecule together and, thus, dissolve it.

Therefore, the correct answer is (a).

2. With reference to street-lighting, how do sodium lamps differ from LED lamps?
- (1) Sodium Lamps produce light in 360 degrees but it is not so in the case of LED lamps.
 - (2) As street-lights, sodium lamps have longer life span than LED lamps.
 - (3) The spectrum of visible light from sodium lamps is almost monochromatic while LED lamps offer significant colour advantages in street-lighting.
- Select the correct answer using the codes given below:
- (a) 3 only
 - (b) 2 only
 - (c) 1 and 3 only
 - (d) 1, 2 and 3

Answer: (c)

Explanation: LED Chips are mounted on a circuit board, so depending on the configuration, usually 180 degrees. This is typically an advantage because light is usually desired over a target area (rather than all 360 degrees around the bulb). **So, statement 1 is correct.**

Sodium lamps lifespan is around 14,000 hours. LEDs last longer than any light source commercially available on the market. LEDs are typically 40,000 - 60,000 Hours. **So, statement 2 is not correct.**

High-pressure sodium lamps (HPS) emit a broader spectrum of light than the low-pressure lamps, but they still have poorer color rendering than other types of lamps. Low-pressure sodium (LPS) lamps only give monochromatic yellow light and so inhibit color vision at night. LPS lamps in particular are monochromatic which means that the objects illuminated by them appear shadowy black rather than the color you would see during daylight. HPS lamps are better but are still surpassed by virtually every other light on the market. LEDs can be designed to generate the entire spectrum of visible light colors without having to use the traditional color filters required by traditional lighting solutions. **So, statement 3 is correct.**

Therefore, the correct answer is (c).

3. The term 'ACE3' is talked about in the context of
- (a) genes introduced in the genetically modified plants
 - (b) development of India's own satellite navigation system
 - (c) radio collars for wildlife tracking
 - (d) spread of viral diseases

Answer: (d)

Explanation: Angiotensin-converting enzyme 2 (ACE2) is a protein on the surface of many cell types. It is an enzyme that generates small proteins – by cutting up the larger protein angiotensinogen – that then go on to regulate functions in the cell.

Using the spike-like protein on its surface, the SARS-CoV-2 virus binds to ACE2 . Hence, ACE2 acts as a cellular doorway that is a receptor for the virus that causes COVID-19. The spike protein of SARS-CoV-2 can adopt at least 10 structural states in order to cling onto angiotensin-converting enzyme 2 (ACE2) receptor cells in humans. **Therefore, the correct answer is (d).**

4. Bisphenol A (BPA), a cause of concern, is a structural/key component in the manufacture of which of the following kind of plastic?
- (a) Low-density polyethylene

- (b) Polycarbonate
- (c) Polyethylene telephthalate
- (d) Polyvinyl chloride

Answer: (b)

Explanation: Bisphenol A (BPA) is a chemical produced in large quantities for use primarily in the production of polycarbonate plastics and epoxy resins. Polycarbonate plastics have many applications including use in some food and drink packaging, e.g., water and infant bottles, compact discs, impact-resistant safety equipment, and medical devices. **Therefore, the correct answer is (b).**

5. 'Triclosan', considered harmful when exposed to high levels for a long time, is most likely present in which of the following?
- (a) Food preservatives
 - (b) Fruit-ripening substances
 - (c) Reused plastic containers
 - (d) Toiletries

Answer: (d)

Explanation: Triclosan is a lipophilic compound with antimicrobial properties. It is an ingredient added to many consumer products intended to reduce or prevent bacterial contamination. It is added to some antibacterial soaps and body washes, toothpastes, and some cosmetics. It also can be found in clothing, kitchenware, furniture, and toys. **Therefore, the correct answer is (d).**

6. Which one of the following is a reason why astronomical distances are measured in light-years?
- (a) Distances among stellar bodies do not change
 - (b) Gravity of stellar bodies does not change
 - (c) Light always travels in straight line
 - (d) Speed of light is always same.

Answer: (d)

Explanation: A light-year is the distance a beam of light travels in a vacuum in one year. The reasons for measuring astronomical distances in light years are familiar units like kilometers and miles are

absurdly small for describing the vastness of the cosmos and the speed of light is both finite and constant with a value of approximately 2.998×10^8 m/s. **Therefore, the correct answer is (d).**

7. We adopted parliamentary democracy based on the British model, but how does our model differ from that model?
- (1) As regards legislation, the British Parliament is supreme or sovereign but in India, the power of the Parliament to legislate is limited.
 - (2) In India, matters related to the constitutionality of the Amendment of an Act of the Parliament are referred to the Constitution Bench by the Supreme Court.
- Select the correct answer using the code given below:
- (a) 1 only
 - (b) 2 only
 - (c) Both 1 and 2
 - (d) Neither 1 nor 2

Answer: (c)

Explanation: Parliamentary sovereignty means that parliament is superior to the executive and judicial branches of government, and can therefore enact or repeal any law it chooses. It is a cornerstone of the UK constitutional system. Parliament of India is neither sovereign nor supreme. The authority and jurisdiction of Parliament are limited by the Powers of the other organs, the distribution of legislative powers between the Union and the States, fundamental rights (Article 32), Judicial review and an independent judiciary. Parliament cannot alter the basic features of the Constitution. **So, statement 1 is correct.**

A Constitution Bench is a bench of the Supreme Court having five or more judges on it. **They are set up by the Supreme Court while dealing with matters related to the constitutionality of the Amendment of an Act of the Parliament.** Constitution Benches are exceptions, set up only if one or more of the following circumstances exist:

1. The case involves a substantial question of law pertaining to the interpretation of the Constitution [see Article **145(3)** of the Constitution, which mandates that such matters be heard by a bench of not less than five judges];
2. The President of India has sought the Supreme Court's opinion on a question of fact or law under Article 143 of the Constitution [again, see Article 145(3)];
3. Two or more three-judge benches of the Supreme Court have delivered conflicting judgments on the same point of law, thus warranting a definitive pronouncement by a larger bench;
4. A later three-judge bench doubts the correctness of a judgment delivered by a previous three-judge bench of the Supreme Court, and decides to refer the case to a larger bench for a reconsideration of that earlier judgment.

So, statement 2 is correct.

Therefore, the correct answer is (c).

8. With reference to the Union Government, consider the following statements:

- (1) N. Gopaldaswamy Iyengar Committee suggested that a minister and a secretary be designated solely for pursuing the subject of administrative reform and promoting it.
- (2) In 1970, the Department of Personnel was constituted on the recommendation of the Administrative Reforms Commission, 1966, and this was placed under the Prime Minister's charge.

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: (b)

Explanation: In 1949, the Gopaldaswami Ayyangar Committee while recommending restructuring of the Central Secretariat, suggested that a Department should be identified with a Secretary's charge and a Ministry should be identified with a Minister's charge. It makes no mention of a minister and a secretary to be solely responsible for pursuing the subject of administrative reform and promoting it.

So, statement 1 is not correct.

In 1954, on the recommendation of Paul H. Appleby report, an Organisation and Methods (O&M) Division was set up in the Cabinet Secretariat. In 1964, the O&M Division was transferred to the Ministry of Home Affairs, under the newly created Department of Administrative Reforms. In 1970, on the basis of the recommendations of the Administrative Reforms Commission, the Department of Personnel was set up in the Cabinet Secretariat. Since Cabinet secretariat falls under the Prime Minister, it is safe to say the DoPT was placed under PM's Charge. **So, statement 2 is correct.**

Therefore, the correct answer is (b).

9. 'Right to Privacy' is protected under which Article of the constitution of India?

- (a) Article 15
- (b) Article 19
- (c) Article 21
- (d) Article 29

Answer: (c)

Explanation: In August 2017, a nine-judge bench of the Supreme Court in *Justice K. S. Puttaswamy (Retd) Vs Union of India* unanimously held that Indians have a constitutionally protected fundamental right to privacy that is an intrinsic part of life and liberty under Article 21.

Therefore, the correct answer is (c).

10. Consider the following statements:

- (1) In India, there is no law restricting the candidates from contesting in one Lok Sabha election from three constituencies.
- (2) In 1991 Lok Sabha Election, Shri Devi Lal contested from three Lok Sabha constituencies.
- (3) As per the existing rules, if a candidate contests in one Lok Sabha election from many constituencies, his/her party should bear the cost of bye elections to the constituencies vacated by him/her in the event of him/her winning in all the constituencies.

Which of the statements given above is/are correct?

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

Answer: -

This question was cancelled according to UPSC Answer key

11. The vegetation of savannah consists of grassland with scattered small trees, but extensive areas have no trees. The forest development in such areas is generally kept in check by one or more or a combination of some conditions. Which of the following are such conditions?

- (1) Burrowing animals and termites
- (2) Fire
- (3) Grazing herbivores
- (4) Seasonal rainfall
- (5) Soil properties

Select the correct answer using the code given below:

- (a) 1 and 2
- (b) 4 and 5

- (c) 2, 3 and 4
- (d) 1, 3 and 5

Answer: (c)

Explanation: Here is depends on grazing intensity and not the burrowing animals or termites. **So, statement 1 is not correct.**

Bush fires are common in Savannah because of alternate wet and dry season which can modify the forest.

Grazing intensity is a major reason for type of Savannah, so Grazing herbivores do contribute in keeping a check on forest. **So, statement 2 is correct.**

It has seasonal rainfall based on which it is divided into wet, dry or thornbush. **So, the statement 3 is correct.**

Soil properties influence the type of Savannah and its vegetation but don't contribute in checking it once formed. **So, statement 5 is not correct.**

Therefore, the correct answer is (c).

12. With reference to the water on the planet Earth, consider the following statements:
- (1) The amount of water in the rivers and lakes is more than the amount of groundwater.
 - (2) The amount of water in polar ice caps and glaciers is more than the amount of groundwater.
- 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: (b)

Explanation:

Water in groundwater is 0.62% while in lakes and rivers it is 0.008 (Salt lakes)+0.009(freshwater lakes) + 0.0001(rivers)=0.0171. **So, the statement 1 is not correct.**

Water in polar ice caps and glaciers is 2% while in groundwater it is 0.62%. **So, the statement 2 is correct.**

Therefore, the correct answer is (b).

13. Consider the following statements:

- (1) Moringa (drumstick tree) is a leguminous evergreen tree
- (2) Tamarind tree is endemic to South Asia
- (3) In India, most of the tamarind is collected as minor forest produce
- (4) India exports tamarind and seeds of moringa
- (5) Seeds of moringa and tamarind can be used in the production of biofuels

Which of the statements given above are correct?

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

Answer: (b)

Explanation:

- It can be evergreen or semi-deciduous. Because of which is extensively eing grown in semi-arid regions in India. **So, statement 1 is not correct.**
- It is native to Africa or Indian-sub continent and grown in South-east Asia and Africa as well. **So, statement 2 is not correct.**
- Most of the tamarind is collected as minor forest produce. **So, the statement 3 is correct.**
- India is one of the largest exporters of both Tamarind and Seed of Moringa. **So, Statement 4 is correct.**
- Seeds of Moringa and Tamarind can be used for biofuel production. **So, statement 5 is correct.**

Therefore, the correct answer is (b).

14. The black cotton soil of India has been formed due to the weathering of
- (a) Brown forest soil
 - (b) Fissure volcanic rock
 - (c) Granite and schist
 - (d) Shale and limestone

Answer: (b)

Explanation: Black soil is formed due to weathering of basalt rock or volcanic rocks. While other rocks don't have the properties found in black soil.

Therefore, the correct answer is (b).

15. With reference to recent developments regarding 'Recombinant Vector Vaccines', consider the following statements:
- (1) Genetic engineering is applied in the development of these vaccines
 - (2) Bacteria and viruses are used as vectors
- 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: They are genetically modified and involve use of genetic engineering to mimic the actual virus for which the vaccine is being produced. **So, statement 1 is correct.**

Both viruses and bacteria are used as vectors to produce the vaccine. Live recombinant vaccines are made of a live viral or bacterial vector that are engineered to express a variety of exogenous antigens.

So, statement 2 is correct.

Therefore, the correct answer is (c).

16. In the context of hereditary diseases, consider the following statements:
- (1) Passing on mitochondrial diseases from parent to child can be prevented by mitochondrial replacement therapy either before or after in vitro fertilisation of egg.
 - (2) A child inherits mitochondrial diseases entirely from mother and not from father.
- 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 mitochondrial replacement therapy can be done either before or after in vitro fertilization. Two mitochondrial replacement techniques have been developed, maternal spindle transfer and pronuclear transfer. In maternal spindle transfer, the chromosome spindle apparatus of the carrier mother is removed from her unfertilized oocyte and inserted into the donor mother's unfertilized and enucleated oocyte that contains normal mtDNA. The hybrid oocyte is then fertilized in vitro by the father's sperm and implanted into the carrier mother by standard in vitro fertilization (IVF) procedures. In pronuclear transfer, both carrier mother's and donor mother's oocytes are first fertilized in vitro. The carrier mother's pronucleus is inserted into the donor mother's enucleated oocyte containing normal mtDNA, and the embryo is implanted into the carrier mother by IVF. The mitochondrial replacement approach is generic; instead of targeting a specific mutation, MRTs replace nearly all mitochondria and their resident mtDNA and so could be applied to any inherited mtDNA disease. **So, statement 1 is correct.**

In nearly all mammals, mitochondrial genome is inherited exclusively from the mother. Transmission of paternal mitochondria or mitochondrial DNA (mtDNA) has not been convincingly demonstrated in humans. **So, statement 2 is correct.**

Therefore, the correct answer is (c).

17. Bollgard I and Bollgard II technologies are mentioned in the context of
- (a) Clonal propagation of crop plants
 - (b) Developing genetically modified crop plants
 - (c) Production of plant growth substances
 - (d) Production of bio-fertilisers

Answer: (b)

Explanation: Bollgard I and Bollgard II are technologies to produce genetically modified crop plants for example BT cotton. So, other can be easily eliminated.

Therefore, the correct answer is (b).

18. In a pressure cooker, the temperature at which the food is cooked depends mainly upon which of the followings?

- (1) Area of the hole in the lid
- (2) Temperature of the flame
- (3) Weight of the lid

Select the correct answer using the code given below:

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

Answer: (c)

Explanation:

A pressure cooker is essentially just a pot with a semi-sealed lockable lid and a valve that controls the pressure inside. It works by capturing the steam that, as it builds up, increases the pressure in the vessel.

Area of the hole in the lid affects the temperature at which the food is cooked. The larger hole will lead to an increase in the steam going out leading to lesser pressure and heat inside the cooker. **So, statement 1 is correct.**

When you cook in a regular pot at atmospheric pressure (14.7 pounds per square inch [psi]), water boils at 100°C (212°F). Inside a pressure cooker, the pressure can increase by an additional 15 psi, to almost 30 psi. At that pressure, water boils at 121°C (250°F). That means food can cook at a much higher temperature than it ever could at atmospheric pressure—and since cooking reactions speed up at higher temperatures, your food cooks faster. Thus, the temperature of the flame will have little effect on the temperature at which the food is cooked. **So, statement 2 is not correct.**

Weight of the lid determines the pressure that is built up inside the cooker. A higher weight of the lid will help to maintain an increased pressure inside the cooker. **So, statement 3 is correct.**

Therefore, the correct answer is (c).

19. Consider the following:

- (1) Bacteria
- (2) Fungi
- (3) Virus

Which of the above can be cultured in artificial/synthetic medium?

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

Answer: (a)

Explanation:

- Some bacteria can be grown in artificial medium but some cannot. **So, statement 1 is correct.**
- Fungi can be grown in artificial medium. **So, statement 2 is correct.**
- Unlike bacteria and fungi, viruses need living host to grow. **So, statement 3 is not correct.**

Therefore, the correct answer is (a).

20. Consider the following statements:

(1) Adenoviruses have single-stranded DNA genomes whereas retroviruses have double-stranded DNA genomes.

(2) Common cold is sometime caused by an adenovirus whereas AIDS is caused by a retrovirus.

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: (b)

Explanation: It is actually the opposite the statement given. Adenoviruses have double stranded DNA genomes while Retroviruses have single stranded DNA genomes. **So, statement 1 is not correct.**

Common cold can sometimes be caused by adenoviruses while AIDS is caused by retrovirus. **So, statement 2 is correct.**

Therefore, the correct answer is (b).

21. Consider the following statements:

(1) 'Right to the City' is an agreed human right and the UN-Habitat monitors the commitments made by each country in this regard.

(2) 'Right to the City' gives every occupant of the city the right to reclaim public spaces and public participation in the city.

(3) 'Right to the City' means that the State cannot deny any public service of facility to the unauthorized colonies in the City.

Which of the statements given above is/are correct?

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

Answer: (d)

Explanation: 'Right to the City' (RTC) is not agreed as a human right by all countries yet. In 2016, India had opposed the inclusion of the Right to the City in the draft New Urban Agenda that aimed to define the way cities world-wide are shaped over the next two decades. Following negotiations, the revised draft agenda's opening section titled the 'the Quito Declaration on Sustainable Cities and Human Settlements' retained the reference to RTC. It states, "Cities for all is also recognised as the Right to the City in some countries, based on a people-centered vision of cities as places that strive to guarantee a decent and full life for all inhabitants." **So, statement 1 is not correct.**

The right to city also means "the right of people to a safe and healthy habitat, and to adequate and decent housing regardless of their social and economic status" and "to fully enjoy the city and its public spaces on the basis of the principles of sustainability, social justice, respect for different urban cultures, and a balance between the urban and the rural. Exercising the right to the city is [further] based on the democratic management of the city, on the social and environmental function of property and of the city, and on the full exercise of citizenship. **So, statement 2 is correct.**

The right to the city envisions a socially and spatially just distribution and planning of material resources, ensuring good living conditions across the human settlement continuum. The Right to the City (RTC) recognises equal access to urban life as a basic human right for all including migrants, slum dwellers and the homeless. RTC gives every occupant, irrespective of their legality, a claim over the city. It requires the State to act on the principles of social justice and provide equal services to each and every resident. **So, statement 3 is correct.**

Therefore, the correct answer is (d).

22. With reference to India, consider the following statements:

- (1) Judicial custody means an accused is in the custody of the concerned magistrate and such accused is locked up in police station, not in jail.
- (2) During judicial custody, the police officer in charge of the case is not allowed to interrogate the suspect without the approval of the court.

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: (b)

Explanation: Judicial Custody is the custody of court. It is mentioned in section 167 of the Code of Criminal Procedure (CrPC). Remand order is issued by the Judicial Magistrate and on the basis of remand order the accused is lodged to Judicial Custody. To release the accused from custody, a warrant of release is necessary.

Police Custody is different from Judicial custody, where the Police can seek for 15 Day, for the purpose of interrogation and investigation, where the accused is in police custody/lockup.

Therefore, the correct answer is (b).

23. With reference to India, consider the following statements:

(1) When a prisoner makes out a sufficient case, parole cannot be denied to such prisoner because it becomes a matter of his/her right.

(2) State Governments have their own Prisoners Release on Parole Rules.

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: (b)

Explanation: Parole cannot be demanded as a right by the convict. It is given by the court in recognition of good behavior of a convict. After the first appeal after conviction, which when dismissed, allows for a convict to apply for parole under the prevalent rules. Every state has its own parole rules. Emergency parole was given to convicts, undergoing sentence upto 7 years, due to Covid- 19 pandemic to decongest prisons in 2020.

Parole is under the Jail Rules which are covered under the state list and can be granted to Indian Citizens.

Therefore, the correct answer is (b).

24. At the national level, which ministry is the nodal agency to ensure effective implementation of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006?
- (a) Ministry of Environment, Forest and Climate Change
 - (b) Ministry of Panchayati Raj
 - (c) Ministry of Rural Development
 - (d) Ministry of Tribal Affairs

Answer: (d)

Explanation: The Forest Rights Act (FRA), 2006 recognizes the rights of the forest dwelling tribal communities and other traditional forest dwellers to forest resources, on which these communities were dependent for a variety of needs, including livelihood, habitation and other socio-cultural needs. The Ministry of Tribal Affairs is the nodal agency to ensure effective implementation of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

Therefore, the correct answer is (d).

25. A legislation which confers on the executive or administrative authority an unguided and uncontrolled discretionary power in the matter of application of law violates which one of the following Articles of the Constitution of India?
- (a) Article 14
 - (b) Article 28
 - (c) Article 32
 - (d) Article 44

Answer: (a)

Explanation: Administrative discretion is against equality and it becomes the cause of arbitrariness, discrimination and unjust action. In *Jayantilal Kalidas Mehta vs The State of Maharashtra 1970* case, some sections were contended that gave unguided, uncontrolled and arbitrary powers to the collector, which were violating Article 14 of the constitution.

Therefore, the correct answer is (a).

26. Which one of the following in Indian policy is an essential feature that indicates that it is federal in character?
- (a) The independence of judiciary is safeguarded.
 - (b) The union Legislature has elected representatives from constituent units.

- (c) The Union Cabinet can have elected representatives from regional parties.
- (d) The Fundamental rights are enforceable by Courts of Law.

Answer: (a)

Explanation: Features/characteristics of Indian Federalism

- (1) Clear division of powers between the Centre and the states,
- (2) **Independent Judiciary,**
- (3) Bicameral Legislature,
- (4) Dual government polity,
- (5) Supremacy of constitution.

Response (b) is vague as it doesn't make it clear whether it refers to upper house or lower house of the parliament.

Therefore, the correct answer is (a).

27. Which of the following **best** defines the term 'State'?

- (a) A community of persons permanently occupying a definite territory independent of external control and possessing an organized government.
- (b) A politically organized people of a definite territory and possessing an authority to govern them, maintain law and order, protect their natural rights and safeguard their means of sustenance.
- (c) A number of persons who have been living in a definite territory for a very long time with their own culture, tradition and government.
- (d) A society permanently living in a definite territory with a central authority, an executive responsible to the central authority and an independent judiciary.

Answer: (a)

Explanation: As used in political science, the word state means a community or society politically organized under one independent government within a definite territory and subject to no outside control.

The essential attributes of a state are:

- 1. Defined territory
- 2. Population
- 3. Organized government
- 4. Sovereignty and independence

Therefore, the correct answer is (a).

28. With reference to Indian judiciary, consider the following statements:

- (1) Any retired judge of the Supreme Court of India can be called back to sit and act as a Supreme Court judge by the Chief Justice of India with prior permission of the President of India.
- (2) A High Court in India has the power to review its own judgement as the Supreme Court does.

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:

Under Article 128 of the Constitution, the Chief Justice of India may, at any time, with the previous consent of the President, request any person who has held the office of a Judge of the Supreme Court to sit and act as a Judge of the Supreme Court. **So, statement 1 is correct.**

Article 137 of the Constitution of India explicitly grants the Supreme Court the power to review any of its judgments or orders. This power is however subject to the Rules made by the Supreme Court under Article 145, as well as the provisions of any law enacted by parliament. However, no such power has been granted to High Courts by the Constitution. **So, statement 2 is not correct.**

Therefore, the correct answer is (a).

29. With reference to India, consider the following statements:

- (1) There is only one citizenship and one domicile.
- (2) A citizen by birth only can become the Head of State.
- (3) A foreigner once granted the citizenship cannot be deprived of it under any circumstances.

Which of the statements given above is/are correct?

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

Answer: (a)

Explanation: A single citizenship means that all Indians irrespective of their State of Domicile are the Citizens of India. In India, A person born in Punjab or kerala can only be a citizen of India and not a citizen of the State of their domicile like in the USA. **So, statement 1 is correct.**

In India a citizen whether by birth, registration, naturalization or descent can become President. In USA only natural-born citizen of the United States can become President. **So, statement 2 is not correct.**

The person who obtains Indian citizenship by birth, by domicile and by incorporation of territory can never be deprived of their citizenship. **Only person who have got the citizenship by naturalisation and registration can be** deprived of it under following circumstances:

- 1) obtained the citizenship by fraud
- 2) shown disloyalty to the Constitution of India
- 3) unlawfully traded or communicated with the enemy during a war
- 4) within five years after registration or naturalisation, been imprisoned in any country for two years and
- 5) has been ordinarily resident out of India for seven years continuously. **So, statement 3 is not correct.**

Therefore, the correct answer is (a).

30. Which one of the following factors constitutes the **best** safeguard of liberty in a liberal democracy?
- (a) A committed judiciary
 - (b) Centralisation of powers
 - (c) Elected government
 - (d) Separation of powers

Answer: (d)

Explanation: Separation of Power between legislative, executive and judiciary maintains checks and balances in the system. It establishes limited government. Thus it is the best safeguard of liberty in a liberal democracy.

Therefore, the correct answer is (d).

31. How is permaculture farming different from conventional chemical farming?
- (1) Permaculture farming discourages monocultural practices but in conventional chemical farming, monoculture practices are pre-dominant.
 - (2) Conventional chemical farming can cause increase in soil salinity but the occurrence of such phenomenon is not observed in permaculture farming.
 - (3) Practice of mulching is very important in permaculture farming but not necessarily so in conventional chemical farming.

Select the correct answer using the code given below:

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

Answer: (b)

Explanation: Permaculture tries to look at a piece of land in a **holistic manner**, integrating every **animal and plant** living on it, and combining that with social structures designed to foster long-lasting agriculture as well. Each element of a food cycle is broken down into what it requires and what it contributes, and then each element is pieced together to form a dynamically self-supporting whole. **So, statement (3) is not correct.**

- **High-density crops and the use of single crops** over large expanses of lands strips away necessary nutrients as generations pass, eventually leaving the land barren. So Permaculture discourages monoculture. **So, statement (1) is correct.**
- At the same time, artificial fertilizers can **build up salts over time**, making the soil inhospitable to plants. **So, statement (2) is correct.**
- **Mulching is an important practice in permaculture.** **So, statement (4) is correct.**

Therefore, the correct answer is (b).

32. With reference to 'palm oil', consider the following statements:

- (1) The palm oil tree is native to Southeast Asia.
- (2) The palm oil is a raw material for some industries producing lipstick and perfumes.
- (3) The palm oil can be used to produce biodiesel.

Which of the statements given above are correct?

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

Answer: (b)

Explanation:

- Palm oil is derived from the oil palm tree, which is native to **West Africa** and grows best in tropical climates with abundant water. **It was imported into SE Asia** in the mid 19th century. Oil palm flourishes in the humid tropics and produces high yield when grown 10 degrees north and south of the equator. **So, statement (1) is not correct.**
- Palm Sludge Oil (PSO) is the floating residual oil that separated during the initial stage of POME discharge to the pond. The PSO is currently being categorised under

sludge oil as it exhibits high Free Fatty Acids (FFA) and very low Deterioration of Bleachability Index (DOBI) values. Due to the inferior quality of PSO, this residual oil **cannot be used directly as food source** but normally being used for low-grade laundry soap formulation to substitute palm **fatty acids** distillate.

- Conventionally, Volatile short chain fatty Acid (VSCFA) has been widely used as raw material in the **fragrant industry for the production of perfume via esterification process. So, statement (2) is correct.**
- If refined, the PSO can be applied directly as boiler fuel, raw material for biodiesel production **So, statement (3) is correct.**

Therefore, the correct answer is (b).

33. With reference to the Indus river system of the following four rivers, three of them pour into one of them, which joins the Indus direct. Among the following, which one is such river that joins the Indus direct?
- (a) Chenab
 - (b) Jhelum
 - (c) Ravi
 - (d) Sutlej

Answer: (d)

Explanation: Rivers Chenab, Jhelum, Ravi pour into Sutlej River. Sutlej river is the one that directly joins the River Indus.



Therefore, the correct answer is (d).

34. With reference to India, Didwana, Kuchaman, Sargol and Khatu are the names of
- (a) Glaciers
 - (b) Mangrove areas
 - (c) Ramsar sites
 - (d) Saline lakes

Answer: (d)

Explanation: Saline lakes

Playas are small lakes with flat floors and undrained basins in which water collects after rains and evaporates quickly are called *playas*.

- **Didwana** is a *playa*. Other such *playas* are the Kuchaman, the **Sargol** and the **Khatu lakes**.
- **Didwana** is a town in the Nagaur district of Rajasthan. It also has a famous Didwana **salt-water lake** of Rajasthan. The lake is about 4 km in length and with 3 km breadth, The depression is surrounded on all sides by sandhills, except to the west. The depression bed shows the presence of black clay and in appearance is similar to that of the Sambhar lake
- **Kuchaman lake** is a continental **saline lake** located around **Kuchaman** city, Nagaur District, Rajasthan

Therefore, the correct answer is (d).

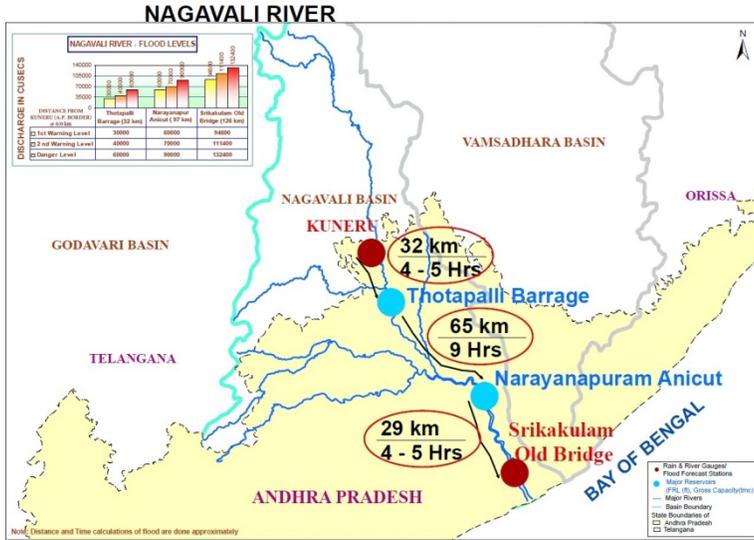
35. Consider the following rivers:

- (1) Brahmani
- (2) Nagavali
- (3) Subarnarekha
- (4) Vamsadhara

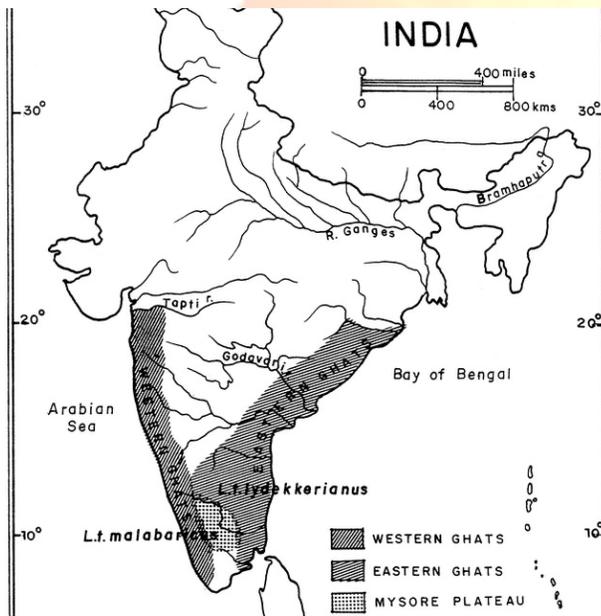
Which of the above rise from the Eastern Ghats?

- (a) 1 and 2
- (b) 2 and 4
- (c) 3 and 4
- (d) 1 and 3

Answer: (b)



Explanation:



• Subarnarekha and Brahmani doesn't rise from Eastern Ghats
Therefore, the correct answer is (b).

36. Consider the following statements:

- (1) The Global Ocean Commission grants licences for seabed exploration and mining in international waters.
- (2) India has received licences for seabed mineral exploration in international waters.
- (3) 'Rare earth minerals' are present on seafloor in international waters.

Which of the statements given above are correct?

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

Answer: (b)

Explanation:

Global Ocean Commission was an international initiative between 2013 and 2016 to raise awareness, and promote action to address the degradation of the ocean and help restore it to full health and productivity. Its focus was on the high seas, the vast ocean areas that lie beyond the Exclusive Economic Zones of individual states.

International Sea bed Authority's mandate is to ensure the effective protection of the marine environment from harmful effects that may arise from deep-seabed related activities.

- **States Parties to UNCLOS organize and control all mineral-resources-related activities through ISA. So, statement (1) is not correct.**
- India has been allotted a site of 75,000 square kilometres in the Central Indian Ocean Basin (CIOB) by the **International Seabed Authority (ISA)** for the exploitation of Polymetallic Nodules (PMN).
- The Ministry of Earth Sciences is carrying out exploration activities for Poly-metallic Nodules (PMN) in the CIOB and for Poly-metallic Sulphides (PMS) in parts of Central and South-West Indian ridges.
- India was the first country to receive the status of a 'Pioneer Investor' in 1987 and was given an area of about **1.5 lakh sq km** in the CIOB for nodule exploration. In 2002, India signed a contract with the ISA and after complete resource analysis of the seabed 50 per cent was surrendered and the country retained an area of 75,000 sq km. **So, statement (2) is correct.**
- It has been estimated that **380 million metric tonnes of PMN and rare earth minerals** are available at the bottom of the seas in the Central Indian Ocean. **So, statement (3) is correct.**

Therefore, the correct answer is (b).

37. Among the following which one is the **least** water-efficient crop?

- (a) Sugarcane
- (b) Sunflower
- (c) Pearl millet
- (d) Red gram

Answer: (a)

Explanation: Oil seed and coarse cereals are produced mostly cultivated in dry land areas. That automatically eliminated the three options.

Table INDICATIVE VALUES OF CROP WATER NEEDS AND SENSITIVITY TO DROUGHT

| Crop | Crop water need (mm/total growing period) | Sensitivity to drought |
|-----------|--|------------------------|
| Sugarcane | 1500-2500 | High |
| Sunflower | 600-1000 | low-medium |

Therefore, the correct answer is (a).

38. Consider the following statements:

- (1) In the tropical zone, the western sections of the oceans are warmer than the eastern sections owing to the influence of trade winds.
- (2) In the temperate zone, westerlies make the eastern sections of oceans warmer than the western sections.

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:

Trade winds:

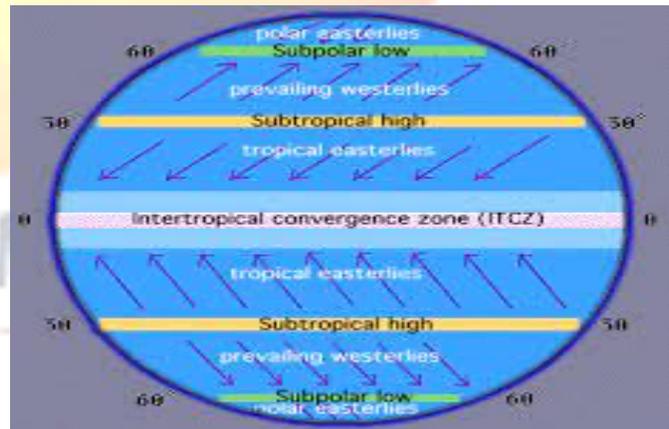
When trade winds move over warm tropical waters, they pick up moisture and bring heavy rainfall to the windward-facing slopes of mountainous areas, contrasting with the downward motion of dry air that creates desert areas on land.

- In tropical zone, western section of oceans are warmer. So, statement (1) is correct.

Westerlies:

- In temperate zones, eastern sections of oceans are warmer. So, statement (2) is correct.

Therefore, the correct answer is (c).



39. In the context of India's preparation for Climate-Smart Agriculture, consider the following statements:

- (1) The 'Climate-Smart Village' approach in India is a part of a project led by the Climate Change, Agriculture and Food Security (CCAFS), an international research programme.
- (2) The project of CCAFS is carried out under Consultative Group on International Agricultural Research (CGIAR) headquartered in France.
- (3) The International Crops Research Institute for the Semi Arid Tropics (ICRISAT) in India is one of the CGIAR's research centres.

Which of the statements given above 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 CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) envisions the **Climate-Smart Village project** to not only be long-term, but also participatory and relevant to the local context. Women farmers are encouraged to weigh in on all the discussions and take the lead in prioritizing what activities should be implemented in their villages. This is to make sure the climate-smart farming practices stick on long after the project has been phased out.

So, statement (1) is correct.

CGIAR to play a major role in bringing to scale practices, technologies and institutions that enable agriculture to meet triple goals of food security, adaptation and mitigation. All CGIAR Research Centers have a stake in CCAFS, and numerous Research Centers have considerable climate change expertise and activities. CCAFS is made up of the following bodies, each playing a specific governance role:

- Independent Steering Committee (ISC), with both scientific and development expertise
- Lead Center, the International Center for Tropical Agriculture (CIAT) and its Board
- Program Director and a Program Management Committee
- A Program Management Unit, based at Wageningen University & Research and CIAT
- Flagship Leaders and Regional Program Leaders, who are responsible for aspects of CCAFS implementation
- **CGIAR Climate Change Contact Points at each CGIAR Research Center, will help ensure CCAFS is appropriately linked to all Centers and CRPs. So, statement (2) is correct.**

ICRISAT is one of the very few CGIAR Centers to have a structured and executed outreach and scaling program. The breadth of ICRISAT's partnerships shows that currently about half of our partnership funding went to CGIAR Centers, and the other half to non-governmental organizations, the private sector, universities and national partners. **So, statement (3) is correct.**

Therefore, the correct answer is (d).

40. "Leaf litter decomposes faster than in any other biome and as a result the soil surface is often almost bare. Apart from trees, the vegetation is largely composed of plant forms that reach up into the canopy vicariously, by climbing the trees or growing as epiphytes, rooted on the upper branches of trees." This is the most likely description of
- (a) Coniferous forest
 - (b) Dry deciduous forest
 - (c) Mangrove forest
 - (d) Tropical rain forest

Answer: (d)

Explanation: The hot and humid conditions make tropical rainforests an ideal environment for bacteria and other microorganisms. Because these organisms remain active throughout the year, they quickly decompose matter on the forest floor.

Therefore, the correct answer is (d).

41. Under the Indian Constitution, concentration of wealth violates
- (a) The Right to Equality
 - (b) The Directive Principles of State Policy
 - (c) The Right to Freedom
 - (d) The Concept of Welfare

Answer: (b)

Explanation: Article 39 in the Constitution Of India states Certain principles of policy to be followed by the State: The State shall, in particular, direct its policy towards securing:

- that the ownership and control of the **material resources of the community are so distributed as best to sub-serve the common good;**
- that the operation of the economic system does not result in the concentration of wealth and means of production to the common detriment;

Article 39 (b) and (c) are the two most important directive principles that pledge to minimize the concentration of wealth.

Therefore, the correct answer is (b).

42. What is the position of the Right to Property in India?
- (a) Legal right available to citizens only
 - (b) Legal rights available to any person
 - (c) Fundamental Right available to citizens only
 - (d) Neither Fundamental Right nor legal right

Answer: (b)

Explanation: Article 300A states that - No person (*not only limited to citizens*) shall be deprived of his property save by the authority of law.

Therefore, the article protects an individual from interference by the State and dispossess a person of the property unless it is in accordance with the procedure established by law.

The question is vague, as legal right constitutes:

1. Fundamental rights
2. Other constitutional rights
3. and non-constitutional rights or other legal rights.

Option (b) appears to be the right answer.

Therefore, the correct answer is (b).

43. What was the exact constitutional status of India on 26th January, 1950?
- (a) A Democratic Republic
 - (b) A Sovereign Democratic Republic
 - (c) A Sovereign Secular Democratic Republic
 - (d) A Sovereign Socialist Secular Democratic Republic

Answer: (b)

Explanation: The exact status of the India at the time of the commencement of its constitution on 26th January 1950, was a **Sovereign, Democratic, Republic**. It got constitutional status of being **Socialist and Secular** in the ideals stated in the preamble after the 42nd constitutional amendment act of 1976.

Therefore the correct answer is (b).

44. Constitutional government means
- (a) a representative government of a nation with federal structure
 - (b) a government whose Head enjoys nominal powers
 - (c) a government whose Head enjoys real powers
 - (d) a government limited by the terms of the Constitution

Answer: (d)

Explanation: Constitutional government in essence is about constitutionalism which is about limited government. It is defined by the existence of a constitution—which may be a legal instrument or merely a set of fixed norms or principles generally accepted as the fundamental law of the polity—that effectively controls the exercise of political power. In many cases, constitutional government is used interchangeably with “constitutionally limited government” or “limited government”.

Therefore, the correct answer is (d).

45. With reference to India, the terms ‘Halbi, Ho and Kui’ pertain to
- (a) dance forms of Northwest India
 - (b) musical instruments
 - (c) pre-historic cave paintings
 - (d) tribal languages

Answer: (d)

Explanation: Halbi (also Bastari, Halba, Halvas, Halabi, Halvi) is an eastern Indo-Aryan language, transitional between Odia and Marathi. It is spoken by 500,000 people across the central part of India.

Ho is a Munda language of the Austroasiatic language family spoken primarily in India by about 1.04 million people (0.103% of India's population) per the 2001 census. Ho is a tribal language.

Kui (also Kandh, Khondi, Khond, Khondo, Kanda, Kodu (Kōdu), Kodulu, Kuinga (Kūinga), Kuy) is a South-Eastern dravidian language spoken by the kandhas. It is mostly spoken in Odisha, and written in the odia script.

Therefore, the correct answer is (d).

46. Consider the following statements in respect of Bharat Ratna and Padma Awards:
- (1) Bharat Ratna and Padma Awards are titles under the Article 18(1) of the Constitution of India.
 - (2) Padma Awards, which were instituted in the year 1954, were suspended only once.
 - (3) The number of Bharat Ratna Awards is restricted to a maximum of five in a particular year.
- Which of the above statements are **not** correct?
- (a) 1 and 2 only
 - (b) 2 and 3 only
 - (c) 1 and 3 only
 - (d) 1, 2 and 3

Answer: (d)

Explanation: In the Balaji Raghvan Case, 1996, the Supreme Court upheld the constitutional validity of the National Awards—Bharat Ratna, Padma Vibhushan, Padma Bhushan and Padma Sri. It ruled that these awards do not amount to ‘titles’ within the meaning of Article 18 that prohibits only hereditary titles of nobility. Therefore, they are not violative of Article 18 as the theory of equality does not mandate that merit should not be recognised. **So, statement 1 is not correct.**

Padma Awards were instituted in 1954 to recognise distinguished contribution by the people in various spheres of activity. The Padma awards, along with other personal civil honours, was briefly suspended twice, from July 1977 to January 1980 and from August 1992 to December 1995. **So, statement 2 is not correct.**

In total, not more than 120 Padma Awards should be handed out per year. The Padma Awards for the foreigners and posthumous awards aren’t counted under the 120 awards. All the names of the awardees are usually published in the Gazette of India. **So, statement 3 is not correct.**

Therefore, the correct answer is (d).

47. Consider the following statements:

Statement 1:

The United Nations Capital Development Fund (UNCDF) and the Arbor Day Foundation have recently recognized Hyderabad as 2020 Tree City of the World.

Statement 2:

Hyderabad was selected for the recognition for a year following its commitment to grow and maintain the urban forests.

Which one of the following is correct in respect of the above statements:?

- (a) Both Statement 1 and Statement 2 are correct and Statement 2 is the correct explanation for Statement 1.
- (b) Both Statement 1 and Statement 2 are correct but Statement 2 is not the correct explanation for Statement 1.
- (c) Statement 1 is correct but Statement 2 is not correct.

(d) Statement 1 is not correct but Statement 2 is correct.

Answer: (d)

Explanation: Hyderabad was declared as Tree City of the World by FAO and Arbor Day Foundation. So, the option is not correct as it says UNCFD and not FAO. So, Statement 1 is not correct.

The recognition includes 5 standards to grow and maintain urban forests. So, statement 2 is correct.

Standard 1: Establish Responsibility

Standard 2: Set the Rules

Standard 3: Know What You Have

Standard 4: Allocate the Resources

Standard 5: Celebrate Achievements

Therefore, the correct answer is (d).

48. Consider the following statements in respect of the Laureus World Sports Award which was instituted in the year 2000:

- (1) American golfer tiger Woods was the first winner of this award.
- (2) The award was received mostly by 'Formula One' players so far.
- (3) Roger Federer received this award maximum number of times compared to others.

Which of the above statements 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: Awarded to Tiger Woods. **So, statement 1 is correct.**

Mostly received by Lawn Tennis players. 10 times by Lawn Tennis players while only 4 times by F1 players. **So, Statement 2 is not correct.**

Roger Federer has received it 5 times till now. **So, statement 3 is correct.**

Therefore, the correct answer is (c).

49. Consider the following statements in respect of the 32nd Summer Olympics:
- (1) The official motto for this Olympics is "A New World".
 - (2) Sport Climbing, Surfing, Skateboarding, Karate and Baseball are included in this Olympics.
- 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: The Motto was 'United by Emotions'. **So, statement 1 is not correct.**

All these sports were included in Olympics. **So, statement 2 is correct.**

Therefore, the correct answer is (b).

50. Consider the following statements in respect of the ICC World Test Championship:
- (1) The finalists were decided by the number of matches they won.
 - (2) New Zealand was ranked ahead of England because it won more matches than England.
- 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: (d)

Explanation: Point scoring was based on the matches played and their outcome. Each series was awarded a score and this was divided into number of matches played. So, the number of matches won by the team not the sole criteria. It was the total number of points scored in all the series played by an individual team that mattered. **So, Statement 1 is not correct.**

The ICC decided that the same number of points would be available from each series, regardless of series length, so that countries that played fewer Tests were not disadvantaged. It also decided that points would not be awarded for series results, but for match results only. These would be split

equally between all the matches in the series, regardless of whether or not a match was a dead rubber, so that every match counted. In a five-match series, therefore, 20% of the points would be available each match, while in a two-match series, 50% of the points would be available each match.

Therefore, depending on whether the series is 2, 3, 4 or 5 matches long, the number of points awarded for a single match win would be a half, a third, a quarter, or a fifth of the maximum possible from the series. The ICC also decided that a tie should be worth half of a win and that a draw should be worth a third of a win. This all meant that after each match, a side could be awarded a half, a third, a quarter, a fifth, a sixth, an eighth, a ninth, a tenth, a twelfth or a fifteenth of the total points available from the series, depending on the result and how many matches the series happened to consist of. Ultimately, this meant a figure for the total points available from the series needs to be picked very carefully, as not many numbers give all integers when split into all these different fractions (360 does). Being a highly composite number, when 120 was split into all these fractions, an integer was obtained in all cases except one – the points awarded for a draw in a 3-match series should be $131/3$ (a third of a third of 120), but the $1/3$ had been dropped.

England won more matches than New Zealand from 2019 to 2011. **So, Statement 2 is not correct.**

Therefore, the correct answer is (d).

51. Consider the following statements:

- (1) The Governor of the Reserve Bank of India (RBI) is appointed by the Central Government.
- (2) Certain provisions in the Constitution of India give the Central Government the right to issue directions to the RBI in public interest.
- (3) The Governor of the RBI draws his power from the RBI Act.

Which of the above statements 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: The Governor of the reserve Bank of India (RBI) is appointed by the Central government. Their names are cleared by Cabinet Committee on appointments. **So, 1 is correct.**

Section 7 of the RBI Act 1934, provides authority to the Central Government to give directions to the Central Bank in public interest from time-to-time with the consultation of the RBI governor. **So, statement 2 is not correct.**

The Governor of the RBI draws his power from the RBI Act. **So, statement 3 is correct.**

Therefore, the answer is (c).

52. With reference to casual workers employed in India, consider the following statements:

- (1) All casual workers are entitled for Employees Provident Fund coverage.
- (2) All casual workers are entitled for regular working hours and overtime payment.
- (3) The government can by a notification specify that an establishment or industry shall pay wages only through its bank account.

Which of the above statements are correct?

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

Answer: (b)

Explanation:

If you are a salaried employee with a (basic + dearness allowance) less than Rs. 15,000 per month, it is mandatory for you to be opened an Employees Provident Fund (EPF) account by your employer. Organizations with 20 or more employees are required by law to register the EPF scheme, while those with **fewer than 20 employees can also register voluntarily**. If you are drawing a salary higher than Rs. 15,000 per month, you are termed a non-eligible employee and it is not mandatory for you to become a member of the EPF, although you can still register with the consent of your employer and approval from the Assistant PF Commissioner. EPF coverage is not an entitlement for all casual workers but for those who fulfil the criteria given above, also if the employer has less than 20 employees then it is up to the discretion of the employer whether to open EPF for his employees. Hence all casual workers are not entitled to EPF coverage. **Statement 1 is not correct.**

Supreme Court in Jan 2020 hold that an employer cannot differentiate between contractual and permanent employees and ruled that casual workers are also entitled to social security benefits under the Employees' Provident Funds and Miscellaneous Provisions Act and directed to bring all employees under the PF scheme and provide benefits. **So, statement 2 is correct.**

Chapter III of The Code on Wages, 2019 under Section 15:

“All wages shall be paid in current coin or currency notes or by cheque or by crediting the wages in the bank account of the employee or by the electronic mode: Provided that the appropriate Government may, by notification, specify the industrial or other establishment, the employer of which shall pay to every person employed in such industrial or other establishment, the wages only by cheque or by crediting the wages in his bank account.”

Here, “his” is the account of the worker and not the industry. Thus, **statement 3 is correct.**

Therefore, the correct answer is (b).

53. Which among the following steps is most likely to be taken at the time of an economic recession?
- (a) Cut in tax rates accompanied by increase in interest rate.
 - (b) Increase in expenditure on public projects.
 - (c) Increase in tax rates accompanied by reduction of interest rate.
 - (d) Reduction of expenditure on public projects.

Answer: (b)

Explanation: Economic Recession is a macro-economic term that refers a significant decline in the general economic activity, typically when there is two consecutive quarters of economic decline.

During recession various fiscal and monetary policies are undertaken. The central bank reduces the interest rates to near zero to increase the liquidity. So, **option (a) is not correct.**

The government increases massive spending; therefore **option (b) is correct.**

Increase in tax rates and reduction of public expenditure will decrease the liquidity and further restricts the economy of the region/country. Therefore, **(c) and (d) are not correct.**

Therefore, the correct answer is (b).

54. Consider the following statements:

Other things remaining unchanged, market demand for a good might increase if

- (1) price of its substitute increases
- (2) price of its complement increases
- (3) the good is an inferior good and income of the consumers increases

(4) its price falls

Which of the above statements are correct?

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

Answer: (a)

Explanation: Two goods are substitutes if using more of good A replaces the use of good B. For example, if the price of coffee increases, the quantity demanded for tea (a substitute beverage) increases as consumers switch to a less expensive yet substitutable alternative. **So, statement 1 is correct.**

Two goods are complementary if using more of good A requires the use of more good B. For example, if the price of coffee increases, the quantity demanded for coffee stir sticks drops as consumers are drinking less coffee and need to purchase fewer sticks. **So, statement 2 is not correct.**

An inferior good is an economic term that describes a good whose demand drops when people's incomes rise. These goods fall out of favor as incomes and the economy improve as consumers begin buying more costly substitutes instead. **So, statement 3 is not correct.**

Therefore, the correct answer is (a).

55. With reference to 'Urban Cooperative Banks' in India, consider the following statements:

- (1) They are supervised and regulated by local boards set up by the State Governments.
- (2) They can issue equity shares and preference shares.
- (3) They were brought under the purview of the Banking Regulation Act, 1949 through an Amendment in 1966.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation – The options are related to recent BR Act, 1949 amendment brought out in the form of The Banking Regulation (Amendment) Bill, 2020.

Urban Cooperative Banks (UCB) are under RBI's supervision & regulation since the passage of The Banking Regulation (Amendment) Bill, 2020. So, **Statement 1 is not correct.**

The Reserve Bank has come out with draft guidelines allowing primary urban cooperative banks (UCBs) to augment capital through issuance of equity shares, preference shares and debt instruments.

- The UCBs, it said, could raise share capital by issue of equity to persons within their area of operation enrolled as members and also through additional equity shares to the existing members.
- The UCBs, as per the draft, will be permitted to raise Tier-I and Tier-II capital by issuing Perpetual Non-Cumulative Preference Shares (PNCPS), Perpetual Cumulative Preference Shares (PCPS), Redeemable Non-Cumulative Preference Shares (RNCPS) and Redeemable Cumulative Preference Shares (RCPS).
- The UCBs will also be allowed to issue Perpetual Debt Instruments (PDI) which will be eligible to be included in Tier-I capital and Long Term Subordinated Bonds (LTSB) as Tier-II capital.

So, Statement 2 is correct.

The **Banking Regulation Act, 1949** regulates all banking firms in India. Passed as the Banking Companies Act 1949, it came into force from 16 March 1949 and changed to Banking Regulation Act 1949 from 1 March 1966. Initially, the law was applicable only to banking companies. But, the 1966 amendment made it applicable to cooperative banks and introduced other changes. In 2020 it was amended to bring the cooperative banks under the supervision of the Reserve Bank of India. **So, Statement 3 is correct.**

Therefore, the correct answer is (b).

56. Indian Government Bond Yields are influenced by which of the following?

- (1) Actions of the United States Federal Reserve
- (2) Actions of the Reserve Bank of India
- (3) Inflation and short-term interest rates

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 3 only

- (c) 3 only
- (d) 1, 2 and 3

Answer: (d)

Explanation – Bond price & Bond Yield are inversely related. When Bond prices go up, Bond Yield falls & vice-versa. Factors having an impact on Bond price will ultimately have an impact on Bond yield as well. 3 major factors which affect Bond prices are – Inflation, Interest Rates (monetary policy) & Credit ratings.

Monetary policy of US Federal Reserve impacts Indian financial markets by way of imported inflation, increased/decreased money flow in the form of FDI & FII, as seen in post-COVID scenario. **So, Statement 1 is correct.**

Actions of RBI directly affect Inflation & short-term interest rates, which have a bearing on Bond prices & hence Bond yield. **So, Statement 2 is correct.**

Statement 3 is correct as already mentioned.

Therefore, the correct answer is (d).

57. Consider the following:

- (1) Foreign currency convertible bonds
 - (2) Foreign institutional investment with certain conditions
 - (3) Global depository receipts
 - (4) Non-resident external deposits
- Which of the above can be included in Foreign Direct Investments?
- (a) 1, 2 and 3
 - (b) 3 only
 - (c) 2 and 4
 - (d) 1 and 4

Answer: (a).

Explanation : **Foreign Currency Convertible Bonds (FCCB)** means a bond issued by an Indian company in foreign currency and subscribed by a non-resident in foreign currency and convertible

into ordinary shares of the issuing company, either in whole or in part. FCCBs represent a debt obligation of the corporate. Investors have the option to redeem; or to convert them into underlying local shares or global depository receipts. If investors prefer to hold the FCCBs until redemption date, the corporate has to redeem the FCCBs on redemption date. Dilution would take place as and when debt is converted into equity. Since these bonds are convertible in to equity shares over a period of time as provided in the instrument, therefore they are covered under FDI policy & counted towards FDI. [If they are redeemed they count as ECB & a debt obligation, only on converting into equity it is counted towards FDI]. **So, 1 is correct.**

FII with certain conditions - According to IMF and OECD definitions, the acquisition of at least ten percent of the ordinary shares or voting power in a public or private enterprise by non-resident investors makes it eligible to be categorized as foreign direct investment (FDI). In India, as per SEBI (FPI regulations), 2019, a particular FII is allowed to invest upto 10% of the paid up capital of a company, which implies that any investment above 10% will be construed as FDI. **So, 2 is correct.**

Global Depository Receipt (GDR) - Global Depository Receipts means any instrument issued in the form of depository receipt or certificate created by the overseas depository bank outside India and issued to non-resident investors against underlying shares or foreign currency convertible bonds of issuing company. GDRs are equity representing share-holders funds, foreign investment in the form of equity shares issued outside India by a Depository Bank, on behalf of an Indian company which is covered under the FDI policy. GDR proceeds are reckoned as Foreign Direct Investment. **So, 3 is correct.**

Non-resident external deposits - NRI investments that are repatriable are considered FDI while non-repatriable investments are considered domestic investment. **So, 4 is not correct**

Therefore, the correct answer is (a).

58. Consider the following statements:

The effect of devaluation of a currency is that it necessarily

- (1) improves the competitiveness of the domestic exports in the foreign markets
- (2) increases the foreign value of domestic currency
- (3) improves the trade balance

Which of the above statements is/are correct?

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

Answer: (a)

Explanation –

Devaluation reduces the price of export items in foreign currency, thereby making it cheaper in foreign markets & hence making it price competitive. **So, statement 1 is correct.**

Devaluation makes domestic currency cheaper as compared to foreign currency, resulting in decreased foreign value of domestic currency. **So, statement 2 is not correct.**

Trade Balance in simplest terms would mean - the difference between the value of a country's exports and the value of a country's imports for a given period. A country's trade balance is positive or favorable (meaning that it registers a surplus) if the value of exports exceeds the value of imports & vice-versa. Devaluation makes exports cheaper in foreign country, but imports costly in the domestic country. For trade balance to improve, value of exports has to significantly rise as compared to value of imports. Although devaluation is done to improve the trade balance, the difference between the value of imports and exports as well as the preference of people in both countries will determine the improvement or deterioration of the trade balance, and we cannot conclude that devaluation will necessarily improve trade balance. **So, statement 3 is not correct.**

Therefore, the correct answer is (a).

59. Which one of the following effects of creation of black money in India has been the main cause of worry to the Government of India?
- (a) Diversion of resources to the purchase of real estate and investment in luxury housing
 - (b) Investment in unproductive activities and purchase of precious stones, jewellery, gold, etc.
 - (c) Large donations to political parties and growth of regionalism
 - (d) Loss of revenue to the State Exchequer due to tax evasion.

Answer: (d)

Explanation - Black money includes all funds earned through illegal activity and otherwise legal income that is not recorded for tax purposes. Black money proceeds are usually received in cash from underground economic activity and, as such, are not taxed.

Such money needs to be retained as cash or in some other form which cannot be easily detected like precious metals & stones. It can also be used for activities mentioned in Options A, B & C. However,

the biggest concern & worry of Government of India is loss of revenue to Government due to tax evasion, as the magnitude of evasion can only be estimated, & not fully calculated.

Therefore, the correct answer is (d).

60. Which one of the following is likely to be the most inflationary in its effects?
- (a) Repayment of public debt
 - (b) Borrowing from the public to finance a budget deficit
 - (c) Borrowing from the banks to finance a budget deficit
 - (d) Creation of new money to finance a budget deficit

Answer: (d)

Explanation : Repayment of public debt – means Government is returning the borrowed money back to institutions from which it had borrowed earlier. These funds can be used by banks to create new loans, or it may be mopped up by RBI through tightening of monetary policy. Hence it may be mild inflationary or not depending on the ongoing stance.

Borrowing from the public to finance a budget deficit & Borrowing from the banks to finance a budget deficit – in both the cases, a crowding out effect will happen, reducing the funds available for lending, thereby pushing up the cost of borrowing for private players. Hence, it can be mild inflationary.

However, Creation of new money to finance a budget deficit will lead to increase in High-Powered Money supply, pushing up Money-multiplier & hence resulting in multi-fold increase in money supply in the economy. This increased money supply would lead to hyperinflation like scenario observed in Post-WW1 Germany & in Zimbabwe recently. India also witnessed such inflation in 1980s.

Therefore, the correct answer is (d).

61. Which one of the following is used in preparing a natural mosquito repellent?
- (a) Congress grass
 - (b) Elephant grass
 - (c) Lemongrass
 - (d) Nut grass

Answer: (c)

Explanation - Known for its distinct smell, **citronella grass (or lemon grass)** is the most commonly used natural ingredient in mosquito repellants.

Therefore, the correct answer is (c).

62. Consider the following kinds of organisms:

- (1) Copepods
- (2) Cyanobacteria
- (3) Diatoms
- (4) Foraminifera

Which of the above are primary producers in the food chains of oceans?

- (a) 1 and 2
- (b) 2 and 3
- (c) 3 and 4
- (d) 1 and 4

Answer: (b)

Explanation – Only Cyanobacteria & Diatoms are capable of photosynthesis, and act as primary producer in food chains of oceans.

Copepods – Copepods are a group of small crustaceans found in nearly every freshwater and saltwater habitat. A number of species have parasitic phases, and some species may live in other wet terrestrial places.

Cyanobacteria – Cyanobacteria, also called **blue-green algae**, are microscopic organisms found naturally in all types of water. These single-celled organisms live in fresh, brackish (combined salt and fresh water), and marine water. These organisms use sunlight to make their own food.

Diatoms – Diatoms are **photosynthesising algae**, they have a siliceous skeleton (frustule) and are found in almost every aquatic environment including fresh and marine waters, soils, etc.

Foraminifera – Foraminifera are single-celled organisms, members of a phylum or class of amoeboid protists characterized by streaming granular ectoplasm for catching food and other uses; and commonly an external shell of diverse forms and materials.

Therefore, the correct answer is (b).

63. Consider the following animals:

- (1) Hedgehog
- (2) Marmot
- (3) Pangolin

To reduce the change of being captured by predators, which of the above organisms rolls up/roll up and protects/protect its/their vulnerable parts?

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

Answer: (d)

Explanation : Hedgehogs have spikes on their back, which help to deter any threat when they roll up & protect their vulnerable parts.

Marmots build **elaborate burrows** for denning and protection from predators. They have no rolling up mechanism like other 2.

Pangolins have hard scales on their back which help to protect its vulnerable parts when it rolls up.

Therefore, the correct answer is (d).

64. With reference to the 'New York Declaration on Forests', which of the following statements are correct?

- (1) It was first endorsed at the United Nations Climate Summit in 2014.
- (2) It endorses a global timeline to end the loss of forests.
- (3) It is a legally binding international declaration.
- (4) It is endorsed by governments, big companies and indigenous communities.
- (5) India was one of the signatories at its inception.

Select the correct answer using the code given below:

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

Answer: (a)

Explanation:

- **Launched at the UN Secretary-General's Climate Summit in September 2014**, the New York Declaration on Forests (NYDF) outlines ten ambitious global targets to protect and **restore forests and end natural forest loss by 2030**. So, **statements (1 &2) are correct**.
- The NYDF combines goals expressed in the context of a number of individual pledges and agreements, including the Paris Agreement, the Sustainable Development Goals, the Bonn Challenge, the 2020 Strategic Plan on Biodiversity, climate and forest financing pledges, and supply chain commitments.
- The **New York Declaration on Forests** is a voluntary and **non-legally binding political** declaration which grew out of dialogue among governments, companies and civil society. **So, statement (3) is not correct and Statement (4) is correct**.
- India is not the signatory of NYDF. **So, statement (5) is correct**.

Therefore, the correct answer is (a).

65. Magnetite particles, suspected to cause neurodegenerative problems, are generated as environmental pollutants from which of the following?

- (1) Brakes of motor vehicles
- (2) Engines of motor vehicles
- (3) Microwave stoves within homes
- (4) Power plants
- (5) Telephone lines

Select the correct answer using the code given below:

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

Answer : (b)

Explanation:

Magnetite is an iron-oxide mineral that occurs naturally on Earth. Because it is also an important component of many anthropogenic materials (e.g., coal fly ash) and synthetic products (e.g., black toner powders), magnetite can be released to the environment through human activities

- **It has been identified in diesel exhaust, as brake-abrasion particles, in the air of underground stations, along railway lines, at welding workplaces, and in the emissions from industrial combustion processes.**

- There is no evidence of generation of magnetite particles from either domestic microwave stoves or telephone lines.

Therefore, the correct answer is (b).

66. Which one of the following is a filter feeder?

- (a) Catfish
- (b) Octopus
- (c) Oyster
- (d) Pelican

Answer: (c)

Explanation:

Nitrogen is an essential nutrient for plants and animals, but too much nitrogen—often from fertilizer runoff and septic tanks—boosts the growth of algae, which overwhelm water bodies and ultimately reduce oxygen levels in them. **Oysters**, clams, and other shellfish are efficient filter feeders that help remove excess nitrogen from waters by incorporating it into their shells and tissue as they grow.

Therefore, the correct answer is (c).

67. In case of which one of the following biogeochemical cycles, the weathering of rocks is the main source of release of nutrient to enter the cycle?

- (a) Carbon cycle
- (b) Nitrogen cycle
- (c) Phosphorus cycle
- (d) Sulphur cycle

Answer: (c)

Explanation:

The **phosphorus cycle** is the biogeochemical cycle that describes the movement of phosphorus through the lithosphere, hydrosphere, and biosphere. Unlike many other biogeochemical cycles, the atmosphere does not play a significant role in the movement of phosphorus, because phosphorus and phosphorus-based compounds are usually solids at the typical ranges of temperature and pressure found on Earth. The production of phosphine gas occurs in only specialized, local conditions. Therefore, the phosphorus cycle should be viewed from whole Earth system and then specifically focused on the cycle in terrestrial and aquatic systems.

The global phosphorus cycle includes four major processes:

- (i) tectonic uplift and exposure of phosphorus-bearing rocks such as apatite to surface weathering;
- (ii) physical erosion, and chemical and **biological weathering of phosphorus-bearing rocks to provide dissolved and particulate phosphorus to soils, lakes and rivers;**
- (iii) riverine and subsurface transportation of phosphorus to various lakes and run-off to the ocean;
- (iv) sedimentation of particulate phosphorus (e.g., phosphorus associated with organic matter and oxide/carbonate minerals) and eventually burial in marine sediments (this process can also occur in lakes and rivers)

Therefore, the correct answer is (c).

68. Which of the following are detritivores?

- (1) Earthworms
- (2) Jellyfish
- (3) Millipedes
- (4) Seahorses
- (5) Woodlice

Select the correct answer using the code given below:

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

Answer: (c)

Explanation:

- An animal that feeds on detritus. Examples of detritivores are **earthworms**, blowflies, maggots, **millipedes**, dung beetles, fiddler crabs, sea cucumbers and **woodlice**. Detritivores play an important role in the breakdown of organic matter from decomposing animals and plants
- **A seahorse gains energy by eating other live organisms, meaning it is a carnivore. A seahorse is not a decomposer because decomposers gain energy from breaking down dead organisms.**
- **Jellyfish are carnivores and excellent predators.** They sting with tentacles to subdue small aquatic fish, and eat the eggs and invertebrates that stick to their tentacles

Therefore, the correct answer is (c).

69. The 'Common Carbon Metric', supported by UNEP, has been developed for
- (a) assessing the carbon footprint of building operations around the world
 - (b) enabling commercial farming entities around the world to enter carbon emission trading
 - (c) enabling governments to assess the overall carbon footprint caused by their countries
 - (d) assessing the overall carbon foot-print caused by the use of fossil fuels by the world in a unit time

Answer: (a)

Explanation: Measuring Energy Use & Reporting Greenhouse Gas Emissions from Building Operations.

Therefore, the correct answer is (a).

70. Which of the following have species that can establish symbiotic relationship with other organisms?

- (1) Cnidarians
- (2) Fungi
- (3) Protozoa

Select the correct answer using the code given below:

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

Answer: (d)

Explanation: The relationship between cnidarians and dinoflagellate algae is termed as "symbiotic", because both the animal host and the algae are benefiting from the association. It is a mutualistic interaction. **So, statement 1 is correct.**

Many fungi are involved in symbiotic relationships. Some fungi are parasites. They are specialized to penetrate a host and break down the host's tissues. Two common mutualistic relationships involving fungi are mycorrhiza (fungi and plant roots) and lichen (fungi and either cyanobacteria or green algae). **So, statement 2 is correct.**

Symbiosis in protozoa mostly represents a close mutualistic association between a protozoan and unicellular symbionts (bacteria, cyanobacteria or/and unicellular algae) or protozoans and a

multicellular organism (ruminants, lower termites, wood-eating cockroaches, plants). **So, statement 3 is correct.**

Therefore, the correct answer is (d).

71. The money multiplier in an economy increases with which one of the following?

- (a) Increase in the Cash Reserve Ratio in the banks
- (b) Increase in the Statutory Liquidity Ratio in the banks.
- (c) Increase in the banking habit of the people.
- (d) Increase in the population of the country.

Answer: (c)

Explanation : The money created by the Central Banks is the monetary base, also known as high-powered money. Banks create money by making loans. A bank loans or invests its excess reserves (Money in excess of reserve requirements that banks have to maintain like CRR & SLR) to earn more interest.

A one-rupee increase in the monetary base causes the money supply to increase by more than one rupee. The increase in the money supply is the money multiplier.

Increase in CRR & SLR will contain the amount that banks can lend & hence create more money, thus bringing Money Multiplier down.

Increase in banking activity will lead to more money in bank's hands in the form of Time Deposits (FD, RD), Demand Deposits (Savings Bank Account), Cash, etc, thus Increase in banking habit of the people will increase money multiplier.

Merely an increase in the population of the country will not lead to increase in money multiplier if the increased population is unbanked & is financially excluded.

Therefore, the correct answer is (c).

72. With reference to Indian economy, demand-pull inflation can be caused/increased by which of the following?

- (1) Expansionary policies
- (2) Fiscal stimulus

- (3) Inflation-indexing wages
- (4) Higher purchasing power
- (5) Rising interest rates

Select the correct answer using the code given below:

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

Answer: (a)

Explanation:

Expansionary policies – Expansionary policies lead to more economic activity via low interest rates, more money with public etc which can lead to demand-pull inflation.

Fiscal stimulus – Fiscal stimulus means expansionary fiscal policy, which includes increased government consumption or lowering of taxes. Both will ultimately lead to more money in the hands on public, thereby driving up the demand leading to demand-pull inflation.

Inflation – indexed wages – It means linking changes in money wages to changes in the current inflation rate. Here the wages are increased or decreased depending upon the inflation rate. Say for example, a person earns Rs 1000 and the inflation rate is 5%, then her/his inflation indexed wage will become Rs 1050. But the effective wage change will be zero due to the 5 per cent inflation rate. Hence, the purchasing power of the person will remain unchanged. And neither will this lead to an increase in demand or demand-pull inflation.

Higher purchasing power – Higher purchasing power means more money in the hands of public, who will demand whatever is being provided by the market & more, thereby leading to demand-pull inflation.

Rising interest rates – High interest rates lead to contraction in borrowing & spending activity, thereby leading to contraction in inflation. High interest rates will lead to a decrease in the demand of the goods and services, further leading to a contraction in inflation.

Therefore, the correct answer is (a).

73. With reference to India, consider the following statements:

- (1) Retail investors through demat account can invest in 'Treasury Bills' and 'Government of India Debt Bonds' in primary market.
- (2) The 'Negotiated Dealing System Order Matching' is a government securities trading platform of the Reserve Bank of India.
- (3) The 'Central Depository Services Ltd.' Is jointly promoted by the Reserve Bank of India and the Bombay Stock Exchange.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation: The Reserve Bank of India recently announced that retail investors can now invest directly in the government's primary and secondary bond market by opening gilt accounts with the national banks and monetary policy regulator. This structural reform will deepen the bond market in India. A gilt account is similar to a regular bank account; the only difference being that instead of money, a gilt account is credited or debited with treasury bills or government securities. **So, statement 1 is correct.**

'Negotiated Dealing System-Order Matching' refers to RBI's screen-based electronic order matching system for trading in government securities in the secondary market. **So, statement 2 is correct.**

The 'Central Depository Services Ltd.' is promoted by Bombay Stock Exchange Ltd (BSE Ltd) - the Asia's latest Stock Exchange. Other shareholders include HDFC Bank Ltd, Standard Chartered Bank and Canara Bank. **So, 3 is not correct.**

Therefore, the correct answer is (b).

74. With reference to 'Water Credit', consider the following statements:

- (1) It puts microfinance tools to work in the water and sanitation sector.
- (2) It is a global initiative launched under the aegis of the World Health Organization and the World Bank.
- (3) It aims to enable the poor people to meet their water needs without depending on subsidies.

Which of the statements given above 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: Water.org is a global nonprofit organization working to bring water and sanitation to the world. They want to make it safe, accessible, and cost-effective.

They help people get access to safe water and sanitation through affordable financing, such as small loans. WaterCredit as a microfinance tool is created by water.org.

How it works: WaterCredit is a powerful solution and the first to put microfinance tools to work in the water and sanitation sector. WaterCredit helps bring small loans to those who need access to affordable financing and expert resources to make household water and toilet solutions a reality. So, **statement 1 is correct.**

According to water.org, people in need already pay high prices for water, in both time and money. The truth is that many of these families can get a water or sanitation solution in their home for a fraction of their annual water costs. All they need is access to affordable financing to make this a reality. Water.org believed that if given a choice and an opportunity to pay for water and sanitation improvements over a reasonable period of time, millions of people living in poverty would finance long-term solutions versus struggle day-to-day to find that next liter of water. Therefore, **option statement 3 is also correct.**

It does not come under World Health Organization and the World Bank. So, **statement 2 is not correct.**

Therefore, the correct answer is (c).

75. In India, the central bank's function as the 'lender of last resort' usually refers to which of the following?
- (1) Lending to trade and industry bodies when they fail to borrow from other sources.
 - (2) Providing liquidity to the banks having a temporary crisis.
 - (3) Lending to governments to finance budgetary deficits.
- Select the correct answer using the code given below:
- (a) 1 and 2

- (b) 2 only
- (c) 2 and 3
- (d) 3 only

Answer: (b)

Explanation:

As a **Banker to Banks**, the Reserve Bank also acts as the 'lender of the last resort'. It can come to the **rescue of a bank** that is solvent but faces temporary liquidity problems by supplying it with much needed liquidity when no one else is willing to extend credit to that bank. The Reserve Bank extends this facility to protect the interest of the depositors of the bank and to prevent possible failure of the bank, which in turn may also affect other banks and institutions and can have an adverse impact on financial stability and thus on the economy.

Therefore, the correct answer is (b).

76. 'R2 Code of Practices' constitutes a tool available for promoting the adoption of
- (a) environmentally responsible practices in electronics recycling industry
 - (b) ecological management of 'Wetlands of International Importance' under the Ramsar Convention
 - (c) sustainable practices in the cultivation of agricultural crops in degraded lands
 - (d) 'Environmental Impact Assessment' in the exploitation of natural resources

Answer: (a)

Explanation: R2 stands for Responsible Recycling and is a standard specifically created for the electronics recycling industry by Sustainable Electronics Recycling International (SERI).

R2 certified companies to have a policy on managing used and end-of-life electronics equipment, components and materials based on strategies such as reuse, materials and energy recovery and/or disposal. This certification is intended for electronics recyclers.

Therefore, the correct answer is (a).

77. Why is there a concern about copper smelting plants?
- (1) They may release lethal quantities of carbon monoxide into environment.

- (2) The copper slag can cause the leaching of some heavy metals into environment.
- (3) They may release sulphur dioxide as a pollutant.

Select the correct answer using the code given below:

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

Answer: b

Explanation: Every smelting plant has its own oxygen production unit, to feed in smelting process as well as reduce the exhaust of gases. So, carbon monoxide although produced in the smelting process would get converted to carbon dioxide if the plant is functioning properly and if there are any issues with the oxygen producing unit, the smelting process will slow down. So release of lethal amount of carbon mono oxide sounds like an extreme statement. **So, statement 1 is not correct.**

The other byproduct of smelting is slag, the waste matter separated from metals. This slag may leach heavy metals (arsenic, cadmium, lead or mercury depending on the composition of the ore) into groundwater reservoirs. Water which has a high heavy metal content is very toxic to humans. Slag may also increase the concentration of other, less harmful salts in water resources, which may change the taste of water. **So, statement 2 is correct.**

Most copper ores are sulphur-based and smelting releases sulphur dioxide, an air pollutant known to have many harmful effects. **So, statement 3 is correct.**

Therefore, the correct answer is (b).

78. With reference to furnace oil, consider the following statements:

- (1) It is a product of oil refineries.
- (2) Some industries use it to generate power.
- (3) Its use causes sulphur emissions into environment.

Which of the statements given above 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: Fuel oil, also called furnace oil, fuel consisting mainly of residues from crude-oil distillation. Petroleum coke or petcoke and furnace oil which are by-product of crude refining process. **So, statement 1 is correct.**

It is used primarily for steam boilers in power plants, aboard ships, and in industrial plants. Various categories of industries such as cement, thermal power plant, fertilizers, nitric acid, lime kiln, ceramic, glass, foundry, reheating furnaces, calcium carbide, aluminium, boiler based industries etc., use pet coke and furnace oil for various purposes including as fuel. **So, statement 2 is correct.**

It is causing huge emission of sulphur dioxide and secondary sulphate formation as particulate matter (PM). Due to this the Supreme Court imposed a ban on use of pet coke and furnace oil in 2017 in Delhi-NCR. **So, statement 3 is correct.**

Therefore, the correct answer is (d).

79. What is blue carbon?

- (a) Carbon captured by oceans and coastal ecosystems
- (b) Carbon sequestered in forest biomass and agricultural soils
- (c) Carbon contained in petroleum and natural gas
- (d) Carbon present in atmosphere

Answer: (a)

Explanation: Blue carbon is the term for carbon captured by the world's ocean and coastal ecosystems.

The coastal ecosystems of mangroves, tidal marshes and seagrass meadows contain large stores of carbon deposited by vegetation and various natural processes over centuries. These ecosystems sequester and store more carbon – often referred to as 'blue carbon' – per unit area than terrestrial forests. The ability of these vegetated ecosystems to remove carbon dioxide (CO₂) from the atmosphere makes them significant net carbon sinks.

Therefore, the correct answer is (a).

80. In the nature, which of the following is/are most likely to be found surviving on a surface without soil?

- (1) Fern
- (2) Lichen

- (3) Moss
- (4) Mushroom

Select the correct answer using the code given below:

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

Answer: (c)

Explanation:

The ferns are most commonly plants of shaded damp forests of both temperate and tropical zones. Ferns require indirect sunlight, **moist soil**, and a humid atmosphere. Ferns prefer potting soil with good drainage and high organic content. So, these are most likely found in areas with soil.

Lichens have specific requirements for their habitats. Although they can occur on a variety of substrates, each substrate must have the individual components in the right amounts that growing lichen needs. These requirements are: water, air, nutrients, light, and substrates. Every lichen lives on top of something else. The surface of that "something else" is called a substrate. Just about anything that holds still long enough for a lichen to attach to and grow is a suitable substrate. Trees, rocks, houses, tombstones, cars, old farm equipment and more can be substrates.

A moss is a flowerless, spore-producing plant - with the spores produced in small capsules. The plant often grows from trees, absorbing water and nutrients from the atmosphere.

Mushroom, the conspicuous umbrella-shaped fruiting body (sporophore) of certain fungi. Mushrooms can form a symbiotic relationship with trees. Mushrooms can also be grown hydroponically as fungi. They can either **use their substrate as soil or wood**.

Therefore, the correct answer is (c).

81. With reference to the history of ancient India, Bhavabhuti, Hastimalla and Kshemeshvara were famous
- (a) Jain monks
 - (b) Playwrights
 - (c) Temple architects
 - (d) Philosophers

Answer: (b)

Explanation: Bhavabhuti was a famous Sanskrit playwright who wrote famous plays like Mahaviracharita, Malatimadhava etc. He is believed to be the court poet of King Yashovarman of Kannauj. Other two were also playwrights in the ancient period.

Therefore, the correct answer is (b).

82. Consider the following statements:

(1) The Montagu-Chelmsford Reforms of 1919 recommended granting voting rights to all the women above the age of 21.

(2) The Government of India Act of 1935 gave women reserved seats in legislature.

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: (b)

Explanation: The Montagu Chelmsford reforms did not grant franchise to women. **So, statement 1 is not correct.**

The GoI Act of 1935, provided for separate electorates for women on communal basis. However, women could contest from general seats also. **So, statement 2 is correct.**

Therefore, the correct answer is (b).

83. With reference to 8th August, 1942 in Indian history, which one of the following statements is correct?

(a) The Quit India Resolution was adopted by the AICC.

(b) The Viceroy's Executive Council was expanded to include more Indians.

(c) The Congress ministries resigned in seven provinces.

(d) Cripps proposed an Indian Union with full Dominion Status once the Second World War was over.

ANSWER : (a).

Explanation: The Quit India resolution was passed on 8th August in 1942 in Bombay Session of the All India Congress Committee by Mahatma Gandhi.

Viceroy's executive council was expanded in 1945 as part of Wavell plan, so option B is incorrect.

Congress ministries resigned in 1939 , in opposition to the British decision to unilaterally announce India's participation in Second World War. So option C is not correct.

Cripps offer came in march 1942, which promised full dominion status for India after the Second World War. So option D is wrong.

Therefore, the correct answer is (a).

84. Who among the following is associated with 'Songs from Prison', a translation of ancient Indian religious lyrics in English?
- (a) Bal Gangadhar Tilak
 - (b) Jawaharlal Nehru
 - (c) Mohandas Karamchand Gandhi
 - (d) Sarojini Naidu

Answer –(c)

Explanation: Gandhiji wrote the book 'Songs from Prison'.

Therefore, the correct answer is (c).

85. With reference to medieval India, which one of the following is the correct sequence in ascending order in terms of size?
- (a) Paragana - Sarkar - Suba
 - (b) Sarkar - Paragana - Suba
 - (c) Suba - Sarkar - Paragana

(d) Paragana - Suba - Sarkar

Answer – (a)

Explanation: During the medieval period a group of villages comprised a Paragana, above it was the Sarkar, and a Suba was a province above the Sarkar.

Therefore, the correct answer is (a).

86. Who among the following was associated as Secretary with Hindu Female School which later came to be known as Bethune Female School?
- (a) Annie Besant
 - (b) Debendranath Tagore
 - (c) Ishwar Chandra Vidyasagar
 - (d) Sarojini Naidu

Answer – C

Explanation: In 1856, the Government took charge of the Hindu Female School, later renamed as Bethune School. The Managing Committee of the school was then formed and Pandit Ishwar Chandra Vidyasagar, the celebrated social reformer responsible for the eradication of the custom of Sati and a relentless supporter of women's emancipation was made the Secretary.

Hence option C is correct.

Therefore, the correct answer is (c).

87. In the context of Colonial India, Shah Nawaz Khan, Prem Kumar Sehgal and Gurbaksh Singh Dhillon are remembered as
- (a) Leaders of Swadeshi and Boycott Movement
 - (b) Members of the Interim Government in 1946
 - (c) Members of the Drafting Committee in the Constituent Asembly

(d) Officers of the Indian National Army

Answer – (d)

Explanation: All the three were officers in the Indian National Army, who became famous during the INA trials held in the Red Fort , Delhi in 1945.

Therefore, the correct answer is (d).

88. With reference to Indian history, which of the following statements is/are correct?

- (1) The Nizamat of Arcot emerged out of Hyderabad State
- (2) The Mysore Kingdom emerged out of Vijayanagara Empire.
- (3) Rohilkhand Kingdom was formed out of the territories occupied by Ahmad Shah Durrani.

Select the correct answer using the code given below:

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

Answer – (b)

Explanation: The Nizam of Arcot emerged as an independent state after the weakening of the Mughal empire in the first half of eighteenth century. It was a protectorate of the Hyderabad state, but it did not emerge out of it. So option A is wrong.

Mysore kingdom emerged as a powerful state under the Wodeyar dynasty, which initially served as a vassal of Vijayanagar empire. Option B is correct.

Rohilkhand state arose in the modern districts of Rampur, Bareilly etc. under the declining Mughal empire in 1721. Ahmad Shah Durrani started invading India from 1748. Hence C is also wrong.

Therefore, the correct answer is (b).

89. Which one of the following statements is correct?

- (a) Ajanta Caves lie in the gorge of Wagora river.
- (b) Sanchi Stupa lies in the gorge of Chambal river.
- (c) Pandu-lena Cave Srinies lie in the gorge of Narmada river.
- (d) Amaravati Stupa lies in the gorge of Godavari river.

Answer – (a)

Explanation: Ajanta caves lie in the Basaltic gorge of Waghora river. So option A is correct.

Sanchi stupa is in Raisen district of Madhya Pradesh, Chambal doesn't pass through Raisen district. B is wrong.

Pandu – lena caves lie in Nashik district on the north face of a hill called Trirasmī, so C is incorrect.

Amravati Stupa lies on the bank of Krishna river, not Godavari river.

Therefore, the correct answer is (a).

90. Consider the following statements:

- (1) 21st February is declared to be the International Mother Language Day by UNICEF.
- (2) The demand that Bangla has to be one of the national languages was raised in the Constituent Assembly of Pakistan.

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: 21st February is declared to be the International Mother Language Day by UNESCO not UNICEF. So A is wrong.

Member of Constituent Assembly of Pakistan , Dhirendranath Datta proposed legislation in the Constituent Assembly of Pakistan to allow members to speak in Bengali and authorise its use for official purposes. So B is correct.

Therefore, the correct answer is (b).

91. With reference to Chausath Yogini Temple situated near Morena, consider the following statements:

- (1) It is a circular temple built during the reign of Kachchhapaghata Dynasty.
- (2) It is the only circular temple built in India.
- (3) It was meant to promote the Vaishnava cult in the region.
- (4) Its design has given rise to a popular belief that it was the inspiration behind the Indian Parliament building.

Which of the statements given above are correct?

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

Answer ; C

Explanation: Chausath Yogini temple was built by King Devpala of Kachchapaghata dynasty in 11th century. So 1 is correct

Chausath Yogini temple near Jabalpur is also circular in design. So 2 is incorrect

It was not meant to promote Vaishnavism as it is dedicated to Yoginis i.e. female masters of Yoga. So 3 is incorrect.

Option 4 is correct as there is much similarity between the design of both the buildings , so some claim that it inspired the design of Parliament building.

Therefore, the correct answer is (c).

92. Which one of the following ancient towns is well-known for its elaborate system of water harvesting and management by building a series of dams and channelizing water into connected reservoirs?

- (a) Dholavira
- (b) Kalibangan
- (c) Rakhigarhi

(d) Ropar

Answer – A

Explanation: Located in the arid Rann of Kutch, Dholavira stands out among all the Indus Valley sites for its water management system. Underground structures have revealed an intricate system of interconnected water reservoirs, checkdams, bunds for diverting the water of Manhar river to a reservoir. So option A is correct.

At rest of the sites mentioned in the options such elaborate water harvesting structures have not been found. So 2, 3 and 4 are incorrect.

Therefore, the correct answer is (a).

93. In the first quarter of seventeenth century, in which of the following was/were the factory/factories of the English East India Company located?

- (1) Broach
- (2) Chicacole
- (3) Trichinopoly

Select the correct answer using the code given below:

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

Answer: (a)

Explanation: During the first quarter of seventeenth century, factories were setup by the East India Company at Surat, **Broach**, Ahmedabad, Agra and Masulipatnam. **So, Item 1 is correct.**

Kalingapatnam (part of current day Srikakulam and British era **Chicacole**) was one of the harbour villages and was a minor port during East India Company regime. **So, Item 2 is not correct.**

Therefore, the correct answer is (a).

94. From the decline of Guptas until the rise of Harshavardhana in the early seventh century, which of the following kingdoms were holding power in Northern India?

- (1) The Guptas of Magadha
- (2) The Paramaras of Malwa
- (3) The Pushyabhutis of Thanesar
- (4) The Maukharis of Kannauj
- (5) The Yadavas of Devagiri
- (6) The Maitrakas of Valabhi

Select the correct answer using the code given below:

- (a) 1, 2 and 5
- (b) 1, 3, 4 and 6
- (c) 2, 3 and 4
- (d) 5 and 6

Answer: (b)

Explanation: After the decline of the Guptas, the Later Guptas succeeded as the rulers of Magadha during early seventh century. They ruled parts of northern Including Magadha (current day Bihar). **So, Item 1 is correct.**

The Paramara dynasty ruled the western and central parts of India including Malwa, between 9th and 14th century AD, before being captured by Delhi Sultanate rulers. **So, Item 2 is not correct.**

The Pushyabhutis of Thanesar (current day Haryana) ruled various parts of Northern India during 6th and 7th century AD. **So, Item 3 is correct.**

The Maukharis dynasty ruled over parts of Uttar Pradesh and Magadha including Kannauj. The dynasty ruled till around 606 AD, when it was reconquered by the Later Guptas. **So, Item 4 is correct.**

The Yadavas of Devagiri ruled from around 1187 to 1317 AD in western parts of India. **So, Item 5 is not correct.**

The Maitrakas of Valabhi ruled western and northern parts of current day Gujarat during late 5th century to late 8th century AD. **So, Item 6 is correct.**

Therefore, the correct answer is (b).

95. According to Portuguese writer Nuniz, the women in Vijayanagara Empire were expert in which of the following areas?

- (1) Wrestling
- (2) Astrology
- (3) Accounting
- (4) Soothsaying

Select the correct answer using the code given below:

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

Answer: (d)

Explanation:

Fernao Nuniz visited Vijayanagara Empire in the time period of 1535-1537 AD. He observed that there were women in the kingdom who wrestled, who were astrologers and soothsayers, who would write the accounts of expenses. **So, items 1, 2, 3 and 4 are correct.**

Therefore, the correct answer is (d).

96. With reference to Madanapalle of Andhra Pradesh, which one of the following statements is correct?
- (a) Pingali Venkayya designed the tricolour Indian National Flag here.
 - (b) Pattabhi Sitaramaiah led the Quit India Movement of Andhra region from here.
 - (c) Rabindranath Tagore translated the National Anthem from Bengali to English here.
 - (d) Madame Blavatsky and Colonel Olcott set up headquarters of Theosophical Society first here.

Answer: (c)

Explanation: In 1919, Rabindranath Tagore during his brief stay at Theosophical college, Madanapalle, a town in Chittoor, A.P., translated his Bengali poem / National Anthem 'Jana Gana Mana' into English as 'Morning Song of India'.

Therefore, the correct answer is (c).

97. Consider the following pairs:

| | (Historical place) | : | (Well-known for) |
|----|---------------------------|---|-------------------------|
| 1. | Burzahom | : | Rock-cut shrines |
| 2. | Chandra-ketugarh | : | Terracotta art |
| 3. | Ganeshwar | : | Copper artefacts |

Which of the pairs given above is/are correctly matched?

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

Answer: (d)

Explanation:

At Burzahom, Kashmir valley, tools made of bones and stones and tools representing the ritualistic practices were found. It represents the natural setting of the Neolithic people. **So, Pair 1 is not correctly matched.**

Several terracotta artefacts have been unearthed at Chandraketugarh including erotic art on the plaques. **So, Pair 2 is correctly matched.**

At the sites of Ganeshwar-Jodhpur near the Khetri copper mines, several copper artefacts were excavated viz. arrowheads, spearheads, bangles, pottery and chisels etc. **So, Pair 3 is correctly matched.**

Therefore, the correct answer is (d).

98. Consider the following statements:

- (1) It was during the reign of Iltutmish that Chengiz Khan reached the Indus in pursuit of the fugitive Khwarezm prince.
- (2) It was during the reign of Muhammad bin Tughluq that Taimur occupied Multan and crossed the Indus.
- (3) It was during the reign of Deva Raya II of Vijayanagara Empire that Vasco da Gama reached the coast of Kerala.

Which of the statements given above is/are correct?

- (a) 1 only

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

Answer: (a)

Explanation: During the rule of Iltutmish, Chenghiz Khan defeated Jalal al-Din near the banks of Indus. **So, Statement 1 is correct.**

Muhammad Bin Tughluq was the sultan of Delhi from 1325 to 1351 AD. In 1398 AD, Timur invaded India. He crossed the Indus and ravaged Multan and Punjab. **So, Statement 2 is not correct.**

Deva Raya II of Vijayanagara empire ruled between 1422 and 1446 AD. Vasco Da Gama reached the coast of Kerala in 1498. **So, Statement 3 is not correct.**

Therefore, the correct answer is (a).

99. Consider the following statements:

- (1) St. Francis Xavier was one of the founding members of the Jesuit Order.
- (2) St. Francis Xavier died in Goa and a church is dedicated to him there.
- (3) The Feast of St. Francis Xavier is celebrated in Goa each year.

Which of the statements given above 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: In Paris in 1534, St. Francis Xavier pronounced vows as one of the first seven members of the Society of Jesus, or Jesuits, under the leadership of St. Ignatius of Loyola. **So, Statement 1 is correct.**

On December 3, 1552, Francis died of fever on the island of Sancian (Shangchuan, off the Chinese coast). **So, Statement 2 is not correct.**

Each year, on 3rd December, marks the anniversary of St Francis Xavier's death, when thousands gather at the Basilica of Bom Jesus. This annual festival, known as the Feast of St Francis Xavier or Goinchea Saibache Fest, (Lord of Goa Festival), is the biggest of all the Christian festivals in Goa. **So, Statement 3 is correct.**

Therefore, the correct answer is (c).

100. With reference to the history of ancient India, which of the following statements is/are correct?
- (1) Mitakshara was the civil law for upper castes and Dayabhaga was the civil law for lower castes.
 - (2) In the Mitakshara system, the sons can claim right to the property during the lifetime of the father, whereas in the Dayabhaga system, it is only after the death of the father that the sons can claim right to the property.
 - (3) The Mitakshara system deals with the matters related to the property held by male members only of a family, whereas the Dayabhaga system deals with the matters related to the property held by both male and female members of a family.

Select the correct answer using the codes given below:

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

Answer: (b)

Under the Mitakshara school of law all the members of the joint family enjoy coparcenary rights during the father's lifetime. Under Dayabhaga School the sons acquire it on the death of the father. **So, Statement 2 is correct.**

Applicability of either of the laws is not exclusive to any specific caste(s). **So, Statement 1 is not correct.**

Therefore, the correct answer is (b).

