ANSWERS & EXPLANATIONS
GENERAL STUDIES (P) TEST – 3222 (2020)

Q 1.A

- In order to make buying of health insurance policies simpler, in January 2020, the Insurance Regulatory and Development Authority of India (IRDAI) had made it **mandatory for all standalone health insurance companies and general insurance companies to offer a standard health product to the policyholders.** Such a standard health policy is to be called Arogya Sanjeevani Policy. **Hence, statement 1 is correct.**
- As the features of Arogya Sanjeevani Policy are going to be largely similar, buyers will stand to benefit by avoiding making a comparison of health insurance plans. The choice will largely depend on the premium and the level of comfort that the buyer has regarding the insurance company.
- **IRDAI has fixed the minimum entry age as 18 and maximum as 65 years, the policy has no exit age and has provision for lifelong renewability.** This means if a person joins the scheme at the age of 65, he/she can use the policy till his death, provided renewals are done every year. **Hence, statement 2 is correct.**
- This policy mandates to offer a standardized product that covers basic hospitalization needs of customers with a minimum sum insured of Rs 1 lakh and a maximum of Rs 5 lakh with a co-pay of 5 percent and room rent limit up to 2 percent of the sum insured or Rs 5000, whichever is lower.
- Some of the important features of the Standard Health Insurance Policy will be:
  - The minimum and maximum sum insured will be Rs 1 lakh and Rs 5 lakh respectively.
  - Arogya Sanjeevani Policy will be available on both individual lives and on a Family Floater basis.
  - Arogya Sanjeevani Policy will be an annually renewable policy with a grace period of 30 days.
  - Each Arogya Sanjeevani Policy of the insurer will have some basic mandatory covers which shall be uniform across the market. **The premium, however, may be set by the insurers on their own. Hence, statement 3 is not correct.**

Q 2.B

- **Tidal locking** is the phenomenon by which a body has the same rotational period as its orbital period around a partner. The Moon keeps the same face pointing towards the Earth because its **rate of spin is tidally locked so that it is synchronized with its rate of revolution** (the time needed to complete one orbit). In other words, the moon rotates exactly once every time it circles the Earth. That is why we **only see one side of the Moon. Hence statement 1 is correct.**
- **Chandrayaan-2 mission** brought together an Orbiter, Lander and Rover with the goal of exploring south pole of the Moon. This is a unique mission which aims at studying not just one area of the Moon but all the areas combining the exosphere, the surface as well as the sub-surface of the moon in a single mission. Chandrayaan-2's target site **was by far the southernmost ever (on the far side)** selected for a soft lunar landing. However it is **not the first attempt. China's Chang's- 4 achieved humanity's first soft landing on the far side of the Moon, on 3 January 2019. Hence statement 2 is not correct.**
- **The 'dark side' of the Moon** refers to the hemisphere of the Moon that is facing away from the Earth. In reality it is **no darker** than any other part of the Moon's surface as **sunlight does in fact fall equally on all sides of the Moon.** It is only 'dark' to us, as that hemisphere can never be viewed from Earth due to a phenomenon known as 'Tidal Locking'. **Hence statement 3 is not correct.**

Q 3.A

- **The Chakma people are the largest ethnic group in the Chittagong Hill Tracts region in southeastern Bangladesh, and in Mizoram, India (Chakma Autonomous District Council),** they are the second largest ethnic group with around 50 thousand Chakmas in Arunachal Pradesh, India. The Buddhist Chakmas and Hindu Hajongs were displaced from the Chittagong Hill Tracts of erstwhile East Pakistan — present-day Bangladesh — by a hydroelectric project. They were mostly settled in Changlang district in the 1960s.

- Most Chakma people are adherents of Therevada Buddhism. The most important festivals celebrated by the Chakmas are Bizu, Alphaloni, Buddha Purnima and Kathin Civar Dan. Chakmas celebrate various Buddhist festivals. The most important is Buddha Purnima or internationally known as Vesak. It's also known Buddha Birthday worldwide. This is the anniversary of three important events in Buddha's life—his birth, his attainment of enlightenment, and his death. It is observed on the full moon day of the month of Vaisakha (usually in May).

Q 4.B

- To strengthen institutional mechanisms for skill development and increase access to quality and market-relevant training for youth across the country, SANKALP was launched. **SANKALP** aims to address the ongoing challenges like bringing about convergence, **infusing quality in skill development programs and making them market relevant and accessible** while ensuring private participation in the context of short-term training. **Hence option (b) is the correct answer.**
- **SANKALP** has four key result areas viz:
  - Institutional Strengthening at Central, State & District level
  - Quality Assurance of skill development programmes;
  - Inclusion of marginalized population in skill development programmes; and
  - Expanding Skills through PPPs.
- SANKALP is funded through three major parts: **World Bank's Loan**, State's contribution, Industry contribution.

Q 5.B

- **The South Asia Subregional Economic Cooperation (SASEC) set up in 2001**, brings together **Bangladesh, Bhutan, India, Maldives (not a neighbouring country), Myanmar, Nepal, and Sri Lanka** in a project-based partnership that aims to promote regional prosperity, improve economic opportunities, and build a better quality of life for the people of the subregion. **Hence statement 1 is not correct.**
- SASEC countries share a common vision of boosting intraregional trade and cooperation in South Asia, while also developing connectivity and trade with Southeast Asia through Myanmar, to the People's Republic of China, and the global market.
- SASEC members gather regularly to discuss and address shared interests, creating support and ownership for the program at the policy level as well as practical collaboration at the technical working level. Over a decade of successful cooperation has built confidence and mutual trust through various discussion platforms that decide on coordinated actions for the benefit of all.
- In **2016**, the SASEC countries approved the **SASEC Operational Plan 2016-2025**, a 10-year strategic roadmap, which introduced Economic Corridor Development as a fourth sectoral area of focus, to promote synergies and linkages between economic corridors across SASEC countries.
- **ADB serves as the SASEC Secretariat.** As of September 2019, SASEC countries have implemented 55 regional projects worth over $12.5 billion in the energy, economic corridor development, transport, trade facilitation, and information and communications technology sectors. **Hence statement 2 is correct.**

Q 6.D

- Sources of the seventeenth century refer to **two kinds of peasants – khud-kashta and pahi-kashta**. The former were residents of the village in which they held their lands. The latter were non-resident cultivators who belonged to some other village, but cultivated lands elsewhere on a contractual basis.
- People became pahi-kashta either out of choice – for example, when terms of revenue in a distant village were more favourable – or out of compulsion – for example, forced by economic distress after a famine
- **Hence option (d) is the correct answer.**

Q 7.C

- The Fundamental Rights operate as limitations on the tyranny of the executive and arbitrary laws of the legislature. They are justiciable in nature, that is, they are enforceable by the courts for their violation. The aggrieved person can directly go to the **Supreme Court (Article 32) or High Court (Article 226)** which can issue the **writs of habeas corpus, mandamus, prohibition, certiorari and quo warranto** for the restoration of his rights.
- **Habeas Corpus:**
  - The writ of habeas corpus - an effective bulwark of personal liberty - is a remedy available to a person who is confined without legal justification. The words habeas corpus literally mean "to have the body".

- **Mandamus:**
  - The word mandamus literally means "we command". The writ of mandamus is a command issued to direct any person, corporation, inferior court, or **Government requiring him/it to do a particular thing** specified therein, which pertains to his/its office and is further in the nature of a public duty. Implementation of National Food Security Act is the duty of the Government. Hence in the **first case, the writ of Mandamus is likely to be issued.**
- **Prohibition:**
  - A writ of prohibition is **issued to an inferior court, preventing the latter from usurping jurisdiction** which is not legally vested in it. When a tribunal acts without or in excess of jurisdiction, or in violation of rules or law, a writ of prohibition can be asked for. It is generally issued before the trial of the case. In the **third case**, applicant tries to prevent the proceeding of the lower court. **Hence the writ of Prohibition is likely to be issued.**
- **Certiorari:**
  - It is available to any person, wherever any body of persons having legal authority to determine questions affecting the rights of subjects and having the duty to act judicially, act in excess of their legal authority. Although the object of both the writs of prohibition and of certiorari is the same, prohibition is available at an earlier stage whereas certiorari is available at a later stage but in similar grounds, that is, certiorari is issued after authority has exercised its powers.
- **Quo Warranto:**
  - The writ of quo warranto enables enquiry into the **legality of the claim which a person asserts, to an office or franchise** and to oust him from such position if he is an usurper.
  - It is issued when:
    - the office is of public and of a substantive nature;
    - created by statute or by the Constitution itself, and
    - the respondent has asserted his claim to the office.
  - It can be issued even though he has not assumed the charge of the office. In the **second case, writ of Quo Warranto is likely to be issued.**
- **Hence option (c) is the correct answer.**

Q 8.B

- **Summer solstice** is the longest day of the year for the hemisphere in which it occurs when the poles directly face the Sun. Across the Northern Hemisphere, the summer solstice occurs on June 21st. However, **the length of daylight on this day varies with latitude. This day will be longer for higher latitudes, and shorter for lower latitudes.** The longest daylight on the summer solstice in the Northern Hemisphere is experienced above the Arctic Circle. **Hence, statement 1 is not correct.**
- **Equinox** occurs when the center of the visible Sun is directly above the equator. This occurs twice each year, around 20 March and 23 September. On the day of an equinox, **daytime and night time are of approximately equal duration all over the planet. Hence, statement 2 is correct.**

Q 9.C

- The Union Cabinet recently gave its approval to a new pan India Central Sector Scheme-Agriculture Infrastructure Fund. The scheme shall provide a medium - long term **debt financing facility for investment in viable projects for post-harvest management Infrastructure and community farming assets through interest subvention and financial support**. **Hence, statement 1 is correct.**
- Under the scheme, Rs. One Lakh Crore will be provided by banks and financial institutions as loans to Primary Agricultural Credit Societies (PACS), Marketing Cooperative Societies, Farmer Producers Organizations (FPOs), Self Help Group (SHG), Farmers, Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Agri-entrepreneurs, Startups, Aggregation Infrastructure Providers and Central/State agency or Local Body sponsored Public Private Partnership Project
- **All loans under this financing facility will have interest subvention of 3% per annum up to a limit of Rs. 2 crore**. **Hence, statement 2 is correct.** This subvention will be available for a maximum period of seven years. Further, credit guarantee coverage will be available for eligible borrowers from this financing facility under Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme for a loan up to Rs. 2 crore. The fee for this coverage will be paid by the Government. In case of FPOs the credit guarantee may be availed from the facility created under FPO promotion scheme of Department of Agriculture, Cooperation & Farmers Welfare (DACFW).
- Moratorium for repayment under this financing facility may vary subject to minimum of 6 months and maximum of 2 years.

- The Project by way of facilitating formal credit to farm and farm processing-based activities is expected to create numerous job opportunities in rural areas.
- Agri Infra fund will be managed and monitored through an online Management Information System (MIS) platform. It will enable all the qualified entities to apply for loan under the fund. The online platform will also provide benefits such as transparency of interest rates offered by multiple banks, scheme details including interest subvention and credit guarantee offered, minimum documentation, faster approval process as also integration with other scheme benefits.

Q 10.C

- The concept of Climate-Smart Agriculture (CSA) was originally developed by Food and Agriculture Organization (FAO) and officially presented and at the Hague Conference on Agriculture, Food Security and Climate Change in 2010. CSA is an approach to developing the technical, policy, and investment conditions to achieve sustainable agricultural development for food security under climate change. The magnitude, immediacy, and broad scope of the effects of climate change on agricultural systems create a compelling need to ensure comprehensive integration of these effects into national agricultural planning, investments, and programs.
- The **Global Alliance for Climate-Smart Agriculture (GACSA) an initiative of Food and Agriculture Organization (FAO)** is a voluntary alliance of partners, dedicated to addressing the challenges facing food security and agriculture by tapping the wealth and diversity of resources, knowledge, information and expertise, from and between its members, in order to stimulate concrete initiatives at all levels. **Hence statement 1 is correct.**
- The **Alliance is open to membership from all sectors**, including governments, inter-governmental organizations, farmer organizations, NGOs, civil society groups, research institutes and, private sector, whose objectives and activities are consistent with the vision and mission of GACSA, and who fulfill the criteria for membership. Individuals cannot become members of GACSA
- GACSA works towards three aspirational outcomes to:
  - Improve farmers' agricultural productivity and incomes in a sustainable way;
  - Build farmers' resilience to extreme weather and changing climate;
  - **Reduce greenhouse gas emissions associated with agriculture, when possible. Hence, statement 2 is correct.**
- GACSA is supported by a Facilitation Unit, hosted by the Food and Agriculture Organization of the United Nations (FAO) and financed through contributions made by donors into a multi-donor trust fund. The Facilitation Unit provides support to GACSA members to undertake their implementation activities as well and providing key services such as communication, information and knowledge management and exchange processes.
- **The Government of India, Government of Maharashtra, and the World Bank recently signed a US$ 420 million project to help small and marginal farmers in the Marathwada and Vidarbha regions of Maharashtra, increase climate resilient practices in agriculture and ensure that farming continues to remain a financially viable activity for them.** The Maharashtra Project for Climate Resilient Agriculture will be implemented in rural areas largely dependent upon rainfed agriculture. The project will take up a series of activities at the farm and watershed level. It will scale up climate-resilient technologies such as micro-irrigation systems, expand surface water storage, and facilitate aquifer recharge, which is expected to directly contribute to more efficient use of scarce water resources. By adopting climate-resilient seed varieties which have short maturity, are drought and heat resistant, and salt tolerant, the project will help reduce risks of climate-related crop failure and help enhance farmer's income.

Q 11.D

- **The North Eastern Council (NEC)** is not a constitutional body, but a **statutory** organization established under the **North Eastern Council Act, 1971**, as amended in 2002. It is the nodal agency for economic and social development of 8 North Eastern Region States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.
- The Organizational Structure:
  - **Ex-officio Chairman- Union Home Minister. Hence statement 1 is correct.**
  - Vice Chairman- Minister of State (Independent Charge), DoNER
  - **DoNER Members- Governors and Chief Ministers** of all the eight States and 3 members nominated by President. **Hence statement 3 is correct.**
- Initially, NEC was an Advisory Body for North Eastern Region (NER). Now **NEC is mandated to function as a Regional Planning Body for the North Eastern Region. Hence statement 2 is correct.**

- While formulating the regional plans for the North Eastern Region, it is mandated to give priority to schemes and projects, benefitting two or more States, provided that in case of Sikkim, the Council shall formulate specific projects and schemes for that State including the review of implementation of such project and schemes.

Q 12.D

- **District Mineral Foundation:** It is a trust set up as a **non-profit body by state governments**, in **those districts affected by the mining works,** to work for the interest and benefit of persons and areas **affected by mining related operations.**
  - **Directly affected areas** where direct mining-related operations such as excavation, mining, etc. are located.
  - **Indirectly affected areas** such as those areas where local population is adversely affected on account of economic, social and environmental consequences due to mining-related operations. **Hence, statement 2 is correct.**
- It was **mandated through the Mines and Minerals (Development & Regulation) Amendment Act, (MMDR) 2015**. **Hence, statement 1 is correct.**
- It is funded through the **contributions from miners (not from government). Hence, statement 4 is not correct.**
- DMF funds are **non-lapsable funds** and can be u**sed for both immediate and long term investments**. **Hence, statement 3 is not correct.**
- They are treated as **extra-budgetary resources for the State Plan.**
- **"District Mineral Foundation (DMF): Implementation Status and Emerging Best Practices"** document was released by **Centre for Science and Environment (CSE), a Delhi-based think tank recently.**

Q 13.D

- When Alivardi Khan died in 1756, Sirajuddaulah became the nawab of Bengal. The Company was worried about his power and keen on a puppet ruler who would willingly give trade concessions and other privileges. So it tried, but without success, to help one of Sirajuddaulah's rivals become the nawab. An infuriated Sirajuddaulah asked the Company to stop meddling in the political affairs of his dominion, stop fortification, and pay the revenues. After negotiations failed, the Nawab marched with 30,000 soldiers to the English factory at Kassimbazar, captured the Company officials, locked the warehouse, disarmed all Englishmen, and blockaded English ships. Then he marched to Calcutta to establish control over the Company's fort there.
- On hearing the news of the fall of Calcutta, Company officials in Madras sent forces under the command of Robert Clive, reinforced by naval fleets. Prolonged negotiations with the Nawab followed. Finally, in 1757, **Robert Clive led the Company's army against Sirajuddaulah at Plassey**. **Hence statement 1 is correct.**
- One of the main reasons for the defeat of the Nawab was that the **forces led by Mir Jafar, one of Sirajuddaulah's commanders, never fought the battle**. Clive had managed to secure his support by promising to make him nawab after crushing Sirajuddaulah. **Hence statement 2 is correct.**
- The Battle of Plassey became famous because it was the first major victory the Company won in India.
- **After the defeat at Plassey, Sirajuddaulah was assassinated and Mir Jafar was made the nawab of Bengal**. The Company was still unwilling to take over the responsibility of administration. Its prime objective was the expansion of trade. If this could be done without conquest, through the help of local rulers who were willing to grant privileges, then territories need not be taken over directly. **Hence statement 3 is correct.**

Q 14.B

- There exist 3 types of flowering in bamboo which largely depend on species and circumstances:
  - **Continuous Flowering** - Some bamboo species keep flowering year after year without any effect on the plant itself, although the produced seeds are rarely viable. Continuous flowering may also occur in different individual plants of a forest over different periods of time, with not more than one or two month intervals.
  - **Sporadic Flowering** - There is very little pattern to this type of flowering and it may be induced by environmental factors such as drought or cold instead of genetics. Many species of bamboo may flourish both gregariously and sporadically. When sporadic flowering occurs on individual culms, the plants very rarely die but most of the seeds aren't viable either.

- **Gregarious Flowering** - Many woody bamboo species are subject to gregarious flowering which means **that all plants of a particular species flower at the same time, regardless of differences in geographic locations or climate conditions, and then die a few years later.** In other words, when a certain bamboo species starts to flower gregariously, they do this all over the world for a several year period until the entire forest has died.
  - Intervals in the gregarious flowering cycle varies depending on the species, but in general bamboo flowering intervals can be as long as 20-120 years.
  - It isn't triggered by environmental aspects, which hints towards some sort of genetic alarm clock in each bamboo cell that signals the diversion of all energy to flower production and the cessation of vegetative growth.
- **Viviparous flowering** (observed in certain mangrove species): It occurs when seeds or embryos begin to develop before they detach from the parent. It is observed in certain mangrove species.

Q 15.D

- The gold ETF is an exchange-traded fund (ETF) can be bought and sold on stock exchanges thus saving you the trouble of keeping physical gold. Gold ETFs are essentially open-ended mutual fund schemes which are based on ever-fluctuating gold prices. **Hence, statement 1 is correct.**
- Unlike with jewelry, coins, and bars which come with high initial buying and selling charges, the gold ETF costs much lower. Transparency in pricing is another advantage. The price at which it is bought is probably the closest to the actual price of gold, and therefore, the benchmark is the physical gold price. **Hence, statement 2 is correct.**
- As compared to physical gold which is idle wealth, gold ETF is a form of investment that provides returns and can be used to meet short-term as well as long-term financial goals. Gold ETFs come with no risk and are not required to be stored.
- Gold ETFs are treated as non-equity investments and taxed accordingly. Short-term capital gains on units held for less than 36 months will be added to investor's income and taxed as per the applicable slab rate. Long term capital gains on units held for more than 36 months will be taxed at 20% after providing for indexation.
- Gold ETFs do not incur Exit Load, Entry Load, Wealth Tax, Security Transaction Tax, VAT, or Sales Tax. **Hence, statement 3 is correct.**

Q 16.C

- Precipitation refers to material falling out of suspension. Precipitation from a meteorological stand point is water in some form, falling out of the air, and settling on the surface of the earth.
- Rain, snow, hail, sleet, freezing rain are all forms of precipitation. Dew is condensation at the surface and thus is not a form of precipitation. There are two models of precipitation formation i.e collision-coalescence and ice crystal models.
- **Collision-coalescence model**
  - It applies to **warm clouds that form in the tropics. Hence option 1 is correct.**
  - Warm clouds are those that form at altitudes where the **air temperature is above freezing. Hence option 2 is not correct.**
  - For precipitation to form under this model, there needs to be a **variety of different size condensation nuclei. Hence option 3 is correct.**
    - Large condensation nuclei will create large water droplets while smaller condensation nuclei create small ones.
    - In order for the droplets to make their way to the surface they have to be heavy enough to overcome the resistance imposed by upwardly rising air that is fueling the development of the cloud.
    - The smaller, lighter droplets are easily suspended in the updrafts of air, while the larger heavy collector droplets fall and collide with the smaller ones.
    - Upon collision, the droplets coalesce into a bigger droplet. As the droplet falls, resistance by the air flattens the droplet to the point where it becomes unstable and breaks apart.
    - With enough collisions, the droplet achieves a size sufficient to fall all the way to the surface.
- **Ice – crystal model**
  - It is the process of precipitation formation in the middle and high latitudes.
  - Clouds form at altitudes where the temperatures are below the freezing point of water. Water exists in its liquid form even though the temperatures are cold enough to freeze water. Water that has a temperature below freezing but is still in a liquid state is called "super-cooled water". Water in extremely small amounts such as cloud droplets can exist in such a state. Ice crystals are found co-existing with the super-cooled water in cold clouds. When this occurs, the ice crystals will grow at the expense of the water droplets.

- Water can evaporate off the droplet and deposit on the ice in response to the water vapor gradient. The droplet will dissipate in size while the ice crystal grows into a snow flake. Once the snow flake is large enough, it will fall to the surface. Thus, precipitation that falls in the middle and high latitudes starts out as snow. Whether it hits the surface as snow or rain depends on the temperature conditions through which the snowflake falls

Q 17.A

- Pollination is the transfer of pollen from a male part of a plant to a female part of a plant, later enabling fertilisation and the production of seeds, most often by an animal or by wind.
- Pollinating agents are animals such as insects, birds, and bats; water; wind; and even plants themselves, when self-pollination occurs within a closed flower. Pollinators are responsible not just for the reproduction of crops, but also increases in yield.
- There are **several causes for the decline in the number of pollinators**. Most of them are the result of an increase in human activities:
  - Land-use change and fragmentation.
  - Changes in agricultural practices including use of chemical pesticides, fungicides and insecticides.
  - Change in the cropping pattern like **mono-cropping. Hence option 2 is correct.**
  - Cultivation of **Genetically Modified Organisms (GMOs). Hence option 1 is correct.**
  - High environmental pollution from heavy metals and nitrogen
  - Growth of invasive alien species
- **Minimal or Zero tillage increases the pollinators** because many of crop pollinators live underground for most of the year, sometimes at the base of the very plants they pollinate. To protect them, soils should be minimally tilled. **Hence option 3 is not correct.**

Q 18.C

- The cross elasticity of demand is an economic concept that measures the responsiveness in the quantity demanded of one good when the price for another good changes. Also called cross-price elasticity of demand, this measurement is calculated by taking the percentage change in the quantity demanded of one good and dividing it by the percentage change in the price of the other good.
- **It is a measure of relative change in the quantity demanded of a commodity due to a change in the price of its substitute/complement. Hence, statement 1 is correct.**
- **The cross elasticity of demand for substitute goods is always positive because the demand for one good increases when the price for the substitute good increases.** When goods are a substitute for each other then cross elasticity of demand is positive. In other words, when an increase in the price of Y leads to an increase in the demand for X. For instance, with the increase in the price of tea, demand for coffee will increase as coffee substitutes tea. **Hence statement 2 is correct.**
- Alternatively, the cross elasticity of demand for complementary goods is negative. In the case of complementary goods, cross elasticity of demand is negative. A proportionate increase in the price of one commodity leads to a proportionate fall in the demand of another commodity because both are demanded jointly. For example, if the price of coffee increases, the quantity demanded of coffee stir sticks drops as consumers are drinking less coffee and need to purchase fewer sticks.
- Cross elasticity is zero if a change in the price of one commodity will not affect the quantity demanded of the other. In the case of goods which are not related to each other, cross elasticity of demand is zero.

Q 19.B

- **The International Panel on Fissile Materials (IPFM)** was founded in January 2006 and is **an independent group** of arms-control and non-proliferation experts from both nuclear weapon and non-nuclear weapon states. **Hence statement 1 is not correct.**
- The mission of the IPFM is to analyze the technical basis for practical and achievable policy initiatives to secure, consolidate, and reduce stockpiles (military and civil) of highly enriched uranium and plutonium. These fissile materials are the key ingredients in nuclear weapons, and their control is critical to nuclear weapons disarmament, to halting the proliferation of nuclear weapons, and to ensuring that terrorists do not acquire nuclear weapons. Hence statement 2 is correct.
- Its **members include nuclear experts** from seventeen countries: Brazil, Canada, China, France, Germany, India, Iran, Japan, Mexico, Norway, Pakistan, South Korea, Russia, South Africa, Sweden, the United Kingdom, and the United States. **This group of countries includes seven nuclear-weapon states and ten non-weapon states.** IPFM research and reports are shared with international organizations, national governments and nongovernmental groups. **Hence statement 3 is correct.**

Q 20.D

- Currency internationalization is the widespread use of a currency outside the borders of its country of issue. The level of currency internationalization for a currency is determined by the demand other countries have for that currency. Such currencies will also tend to be held as reserve currencies.
- Internationalization of Rupee will facilitate a greater degree of integration of the Indian economy with the rest of the world in terms of foreign trade and international capital flows.
- There are a number of benefits to a country whose currency is internationalized. It provides more certainty to residents, who can denominate foreign transactions in their home currency. **They can also borrow in foreign markets without incurring exchange rate risk, potentially enabling them to find cheaper funding.**
- Other key benefits of internationalization of rupee include savings on foreign exchange transactions for Indian residents, reduced foreign exchange exposure for Indian corporate, **reduction in dependence on foreign exchange reserves for the balance of payment stability**.
- In general, the internationalization of rupee creates an underpinned demand for the currency which should dampen interest rates and thus help **lower the domestic cost of capital.**
- **Hence all the statements are correct.**

Q 21.C

- Earlier, in December 1927, a large number of Muslim leaders had met at Delhi at the Muslim League session and evolved four proposals for their demands to be incorporated into the draft constitution (Nehru Report). These proposals, which were accepted by the Madras session of the Congress (December 1927), came to be known as the 'Delhi Proposals'. These were:
  - **joint electorates in place of separate electorates** with reserved seats for Muslims; **Hence statement 1 is not correct.**
  - **one-third representation to Muslims in Central Legislative Assembly**; **Hence statement 2 is correct.**
  - **representation to Muslims in Punjab and Bengal in proportion to their population**; **Hence statement 3 is not correct.**
  - formation of three new Muslim majority provinces—Sindh, Baluchistan and North-West Frontier Province.

Q 22.C

- There are two major classification of Indian Hindu philosophy.
  - Orthodox (astika) philosophy—Nyaya, Vaisheshika, Samkhya, Yoga, Mīmāṃsā and Vedanta
  - Heterodox (nastika) philosophy —Jain, Buddhist, Ajivika, Ajñana, and Charvaka.
- The orthodox schools recognize the authority of Vedas. The nāstika (heterodox) schools don't draw upon the Vedas as the sole primary authoritative text, but may emphasize other traditions of thought. The main nāstika schools are Cārvāka (pronounced Charvaka, meaning sweet talkers) and Ajivika.
- **Charvaka School: It was originally called as Lokayata (Prevalent in the world)** or **Brahaspatya**.
  - This school may be called **one of the oldest school of Indian materialism. They are hence called materialists.**
  - It rejects Vedas, rejects ritualism of Vedas and **does not believe in god or any other super natural power**.
  - **Ajita Kesakambali is thought to be the first Charvaka while Brihaspati is called its founder.**
  - Most of its literature is now lost and **it is not a living tradition today.**
  - **They believe in: No soul, no consciousness, no god. Karma and Artha only, Dharma and Moksha concepts are beyond Charvaka philosophy.**
- **Aajivika school:**
  - They have often been described as **fatalists: those who believe that everything is predetermined. Hence, option (c) is the correct answer**
  - It is a religious order or sect founded by **Gosala Mankhaliputta, a senior contemporary of Buddha and Mahavira.**
  - The basic theme of ajivikism is the **doctrine of niyati or destiny or doctrine of immutability.**
  - The main source of information on ajivikism is Bhagwati Sutra

Q 23.D

- **The dark web refers to encrypted online content** that is not indexed by conventional search engines. Sometimes, the dark web is also called the dark net. The dark web is a **component of the deep web** that describes the wider breadth of content that does not appear through regular Internet browsing activities.

- **Specific softwares, such as Tor Browser, are required to reach the dark web.** Using the dark web often provides considerably more privacy than just using Tor to access the web. Many dark web sites simply provide standard web services with more secrecy, which benefits political dissidents and people trying to keep medical conditions private. Unfortunately, **online marketplaces for drugs, exchanges for stolen data**, and other illegal activities get most of the attention.
- The dark web is a subset of the deep web that is intentionally hidden, requiring a specific software-Tor-to access. The dark web is a layer deeper and technically part of the deep web (which makes it inaccessible unless you know exactly where to go), but focused on illegal activities and services.
- The terms **"deep web" and "dark web"** are sometimes used interchangeably, but they are not the same. Deep web refers to anything on the internet that is **not indexed by but can be accessible via a search engine like Google.**
  This means that in order to access one of these pages, one needs to either know their exact address (link) or to click on another link once you get in the deep side of the web. Also, the deep web can include significant parts of the legitimate, mainstream web (like Netflix or Amazon pages), simply because they are personalized for users and not all URLs are meant to be indexed.
- A virtual private network, or VPN, is an encrypted connection over the Internet from a device to a network. It enables users to send and receive data across shared or public networks as if their computing devices were directly connected to the private network.
- A blockchain is a growing list of records, called blocks, that are linked using cryptography. It is managed by a cluster of computers not owned by any single entity. Each of these blocks of data (i.e. block) is secured and bound to each other using cryptographic principles.

Q 24.C

- **Zahedan is a city and capital of Sistan and Baluchistan Province, Iran**. The Iranian sea-port of Chabahar has proved crucial for India as it provides sea-land connectivity to Afghanistan bypassing the land route through Pakistan. Zahedan in Iran is located near the Afghan border and the Chabahar-Zahedan rail route could further help smooth movement of Indian goods to Afghanistan. Recently, India has expressed its intention to continue working on the Chabahar-Zahedan railway line in the west Asian country. **Hence pair 1 is not correctly matched.**
- **Hambantota is the main town in Hambantota District, Southern Province, Sri Lanka.** Sri Lanka has lease the southern port of Hambantota to a Chinese venture. Recently the Lankan government has expressed its intention to und this step taken by the previous regime. China's infrastructure-building in Sri Lanka became part of Beijing's Belt and Road Initiative, prompting concern in India. **Hence pair 2 is not correctly matched.**
- **Hulhudhoo-Meedhoo is an island located on the northeastern point of Addu City in Maldives**. Recently, a Memorandum of Understanding (MOU) was signed between governments of India and Maldives for the development of fish processing plants in Maradhoo and Hulhudhoo of Addu Atoll. **Hence pair 3 is correctly matched.**

Q 25.C

- **Recently, NITI Aayog presented India's second Voluntary National Review (VNR) at the United Nations High-level Political Forum (HLPF) on Sustainable Development, 2020.**
- **Statement 1 is correct:** The **High-level Political Forum on Sustainable Development (HLPF) is the main UN platform on sustainable development. It has a central role in the follow-up and review of implementation of the 2030 Agenda for Sustainable.** In 2015, the United Nations General Assembly adopted the 2030 Agenda for Sustainable Development. 193 member countries, including India, got committed to the 17 Sustainable Development Goals that require efforts to end all forms of poverty, fight inequalities and tackle climate change while ensuring that no one was left behind.
- **Statement 2 is correct: The HLPF meets annually in July for eight days under the auspices of the Economic and Social Council (ECOSOC) of the UN.** The VNRs presented by Member States at the HLPF are a critical component of the review of progress and implementation of the 2030 Agenda and the SDGs. The reviews are voluntary and state-led and are aimed at facilitating the sharing of experiences, including successes, challenges and lessons learned. NITI Aayog prepared and presented India's first VNR in 2017.

Q 26.C

- United Nations Climate Change Conference, 2015 (COP 21) decided that two High-Level Champions would be appointed by nations to facilitate this partnership with the ultimate objective to accelerate climate action.

- The High-Level Champions will amongst other tasks provide guidance on the UNFCCC Technical Examination Processes (TEPs) to assist alignment with specific policy options, barriers and priorities being identified through the operation of the Marrakech Partnership for Global Climate Action. **Hence, statement 1 is correct.**
- **The Marrakech Partnership for Global Climate Action** was launched at the 22nd session of the Conference of Parties, 2016 (COP 22) to bring the power of non-Party action to the forefront to help increase the pace and ambition of climate action. **Hence, statement 2 is correct.**
- The Marrakech Partnership organises actions across seven thematic areas, namely – land use (agriculture, forestry and other land use), water, oceans and coastal zones, energy, industry, human settlements and transport.
- The overall approach is to anchor the objectives around the ambition and the transition towards a 1.5°C climate-neutral and resilient world.
- It will use the following tools and mechanisms:
  - Communicating with impact the work of the Marrakech Partnership.
  - Strategic engagement via Regional climate weeks, Technical examination processes on mitigation and adaptation.
  - Tracking and reporting voluntary action via Yearbook of Global Climate Action and NAZCA portal (Non-state Actor Zone for Climate Action)
    - NAZCA portal contains commitments of countries, cities, businesses and international coalitions, including those that are part of the Paris Agreement.

Q 27.D

- **Xeriscaping:** It is the **process of landscaping or gardening that reduces or eliminates the need for supplemental water from irrigation.**
- It is promoted in regions that do not have accessible, plentiful or reliable supplies of freshwater.
- Xeriscaping may be an alternative to various types of traditional gardening
- In some areas is it is also known as water-conserving landscapes, drought-tolerant landscaping or smart camping.
- It emphasizes on those plants whose natural requirements are appropriate to the local climate.
- It is different from natural landscaping, because the emphasis in xeriscaping is on the selection of plants for water conservation, not necessarily selecting native plants.

Q 28.B

- A mangrove is a shrub or small tree that grows in coastal saline or brackish water in the intertidal zone.
- Mangroves occur worldwide in the tropics and subtropics, mainly between latitudes 25°N and 25°S.
- Mangroves are the only species of trees in the world that can tolerate saltwater. However, **they do not require salt**, but they have adapted to tolerate it. They grow even better in freshwater, but salinity keeps out competing species. **Hence, statement 1 is not correct.**
- The dense roots of mangroves help to bind and build soils. The above-ground roots slow down water flows, encourage deposition of sediments and reduce erosion thus **protecting shorelines** from damaging storm and hurricane winds, waves, and floods. **Hence, statement 2 is correct.**
- They maintain water quality and clarity, filtering pollutants and trapping sediments originating from land. With the ability to store vast amounts of carbon, mangrove forests are key weapons in the fight against climate change.
- Since mangroves thrive in warmer temperatures, **they are bound to benefit from a warming climate**. Global warming is acting as a boon to mangrove trees and aid their spread. Instead of being limited to their current homes in subtropical and tropical climates, mangroves are taking advantage of warming temperatures and expand into a temperate climate. There are reports that mangrove trees are now found at higher latitudes such as the Atlantic coast of the United States. Also, mangrove species have proliferated at or near their poleward limits on at least five continents over the past half-century, at the expense of salt marsh. **Hence, statement 3 is correct.**

Q 29.A

- **Article 355** imposes a duty on the Centre to ensure that the government of every state is carried on in accordance with the provisions of the Constitution. It is this duty in the performance of which the Centre takes over the government of a state under Article 356 in case of **failure of constitutional machinery** in state. This is popularly known as **'President's Rule'**.
- A proclamation imposing President's Rule must be approved by both the Houses of Parliament within two months from the date of its issue. If approved by both the Houses of Parliament, the President's Rule

continues for six months. It can be **extended for a maximum period of three years** with the approval of the Parliament, every six months. **Hence statement 2 is not correct.**

- The President acquires the following extraordinary powers when the **President's Rule** is imposed in a state:
  - He can take up the functions of the state government and powers vested in the governor or any other executive authority in the state.
  - He can declare that the **powers of the state legislature are to be exercised by the Parliament. Hence statement 1 is correct.**
  - He can take all other necessary steps including the suspension of the constitutional provisions relating to any body or authority in the state.

Q 30.C

- The **Gurjara Pratihara dynasty** was **founded by Nagabhatta I** in the region of Malwa in the **8th century AD**. He belonged to a Rajput clan. Later one of his successors, Vatsaraja extended his rule over to a large part of North India and made Kannauj in western Uttara Pradesh his capital. Vatsaraja's policy of expansion brought him in conflict with Dharmapala, the Pala King of Bengal and Bihar. Soon, the Rashtrakuta king Dhruva from south India jumped into the fight. And thus began what is known as 'Tripartite Struggle' i.e. struggle among three powers. It continued for about the next hundred and fifty years under various succeeding kings with ups and downs. The Gurjara-Pratiharas, however, could continue to maintain their hold over Kannauj till the last. One of the important kings of this dynasty was Mihira Bhoja (ninth century). **Hence pair 1 is correctly matched.**
- In eastern India, **Pala dynasty** was **founded by Gopala (8th century AD)**. As the names of all the succeeding kings ended with 'Pala' this dynasty come to be known as the 'Pala' dynasty.The son and grandson of Gopala,viz; Dharmapala and Devapala greatly extended the power and prestige of the Pala dynasty. Though their expansion towards west was checked by the Pratiharas, the Palas continued to rule over Bihar and Bengal for nearly four centuries with a small break. The Pala kings were the followers of Buddhism. They greatly promoted this religion by making monasteries (viharas) and temples in eastern India. Dharmapala is known to have founded the famous Vikramashila university near Bhagalpur in Bihar. Like Nalanda university, it attracted students from all parts of India and also from Tibet. **Hence pair 2 is not correctly matched.**
- In south, **Dantidurga** was the **founder of the dynasty called, Rashtrakuta dynasty (8th century AD)**. The capital of the Rastrakutas was Manyakheta or Malkhed near Sholapur. It was under the king Dhruva that the Rashtrakutas turned towards north India in a bid to control Kannauj, then the imperial city. And as mentioned above, it led to the beginning of 'Tripartite struggle'. One of the important kings of the Rashtrakuta dynasty was Krishna I. He built the famous Kailasha temple at Ellora (near Aurangabad, Maharastra). It is dedicated to Lord Shiva and is monolithic i.e. made of one single piece of rock. **Hence pair 3 is correctly matched.**

Q 31.B

- Ecological invasion refers to the process by which some particular species, which are better adapted to a given environment than are its existing inhabitants or activities, enter and eventually dominate an ecosystem.
- Some of the factors which impact the resistance to invasion are discussed below:
  - Resistance to invasion decreases when resource availability is higher than resource uptake, leaving resources for invading plants to utilize. Thus, ecosystems subject to pronounced fluctuations in resource supply may be more susceptible to invasion than systems with a more stable resource supply. It is known as the ''fluctuating resource hypothesis''. **Hence option 1 is not correct.**
  - Native community connectivity may increase biotic resistance to invasion by enhancing species richness and evenness. Communities with higher species richness have higher productivity and thus provide more resource competition. **Hence option 2 is correct.**
  - Extrinsic factors, such as disturbances like first fires, can increase the probability of a successful invasion through several mechanisms. Disturbances may decrease native species' abundances, decrease species diversity, or change community composition. Native species richness can significantly decrease with disturbance presence while invader abundance and richness can significantly increase with increasing disturbance. **Hence option 3 is not correct.**

Q 32.B

- The Eurasian Group on Combating Money Laundering and financing of terrorism is a FATF-style regional body for countries of the Eurasian region. The EAG was established in 2004 and is currently an associate member of the FATF. The EAG became an Associate Member of the FATF in June 2010. **Hence, statement 1 is not correct.**
- The creation of a FATF-style regional body (FSRB) for countries of the Eurasian region that have not been part of existing FSRBs, is to play an important role in combating the threat of terrorism and increasing the transparency and security of financial systems of the region. The EAG objective is to incorporate these countries into the global system on anti-money laundering and combating the financing of terrorism.
- The EAG was created for the countries of the Eurasian region not included in the existing FATF-style regional groups and is intended to play an **important role in reducing the threat of international terrorism and ensure the transparency, reliability, and security of the financial systems of states and their further integration into the international infrastructure for combating money laundering and terrorism financing**.
- EAG brings together nine countries in the region (Belarus, China, India, Kazakhstan, Kyrgyz Republic, Russia, Tajikistan, Turkmenistan, Uzbekistan). Observer status has been granted to 15 countries and 23 international organizations. **India is a member country**. **Hence, statement 2 is correct.**
- The primary goal of the EAG is to ensure effective interaction and cooperation at the regional level and integration of EAG member-states into the international system of anti-money laundering and combating the financing of terrorism in accordance with the recommendations of the FATF and the anti-money laundering and combating the financing of terrorism standards of other international organizations, to which EAG member-states are a party.

Q 33.C

- **Biochar is a charcoal-like substance** that's made by burning organic material from agricultural and forestry wastes (also called biomass) in a controlled process called pyrolysis. **During pyrolysis** organic materials, such as wood chips, leaf litter or dead plants, are burned in a container with very little oxygen. As the materials burn, they release little to no contaminating fumes. **During the pyrolysis process, the organic material is converted into biochar**, a stable form of carbon that can't easily escape into the atmosphere. The energy or heat created during pyrolysis can be captured and used as a form of clean energy. Biochar is by far more efficient at converting carbon into a stable form and is cleaner than other forms of charcoal. **Hence statement 1 is correct.**
- In terms of physical attributes, **biochar is black, highly porous, lightweight, fine-grained** and has a large surface area. Approximately 70 percent of its composition is carbon. The remaining percentage consists of nitrogen, hydrogen and oxygen among other elements.
- Soil degradation is a major concern in agriculture globally. To address this burgeoning problem, researchers suggested applying biochar to degraded soils in order to enhance its quality. Some of the ways that biochar may help improve soil quality include:
  - enhancing soil structure
  - increasing water retention and aggregation
  - decreasing acidity
  - reducing nitrous oxide emissions
  - regulating nitrogen leaching
- Biochar also has the **high carbon sequestration potential.** Biochar has the **ability to store carbon in a stable form, preventing the CO2 from organic matter from leaking into the atmosphere, where it contributes to climate change. Hence statement 2 is correct.**
- Creating biochar actually reduces CO2 in the atmosphere because the process takes a theoretically carbon-neutral process of naturally decaying organic matter and turns it carbon-negative: When plants decay, they emit CO2, which other plants eventually absorb, and the cycle continues. Biochar stabilizes that decaying matter and accompanying CO2 and puts it in the ground to stay for — potentially — hundreds or even thousands of years. This idea, with supposedly enormous potential to help slow global warming, has drawn an impressive array of supporters toward biochar.
- However, biochar is not a silver bullet, and adding biochar into soils may obtain negative results such as inhibiting plant growth and decreasing soil microorganism abundance and activity. **The inherent contaminants within biochars such as polycyclic aromatic hydrocarbons (PAHs) and heavy metals** may partly contribute to the adverse effects following application to soil, which has been extensively reported.

Q 34.D

- The Constitution of India provides for a federal system of government in the country. However, the term '**federation**' has **no where been used** in the Constitution. Instead, **Article 1 of the Constitution describes India as a 'Union of States'.** The Indian federal system is based on the 'Canadian model'.
- **Unitary features of Indian Constitution:**
  - **States Not Indestructible:** The states in India have no right to territorial integrity. The Indian Federation is 'an indestructible Union of destructible states'.
  - **Single Constitution:** The Constitution of India embodies not only the Constitution of the Centre but also those of the states. Both the Centre and the states must operate within this single-frame
  - **Emergency Provisions:** During an emergency, the Central government becomes all powerful and the states go into the total control of the Centre. It converts the federal structure into a unitary one without a formal amendment of the Constitution.
  - **Single Citizenship:** There is only Indian Citizenship and no separate state citizenship. All citizens irrespective of the state in which they are born or reside enjoy the same rights all over the country.
  - **Integrated Judiciary:** The Indian Constitution has established an integrated judicial system with the Supreme Court at the top and the state high courts below it. This single system of courts enforces both the Central laws as well as state laws.
  - **All-India Services:** The members All-India services (IAS, IPS, and IFoS) are recruited and trained by the Centre which also possess ultimate control over them. Thus, these services violate the principle of federalism under the Constitution.
  - **Appointment of Governor:** Governor is appointed by the President. She holds office during the pleasure of the President. She also acts as an agent of the Centre.
  - **Veto Over State Bills:** The governor is empowered to reserve certain types of bills passed by the state legislature for the consideration of the President.
- **Hence option (d) is the correct answer.**

Q 35.D

- There is a positive association between absolute average individual fitness and population size over some finite interval. Such a positive association may (but does not necessarily) give rise to a critical population size below which the population cannot persist.
- **Allee effects are broadly defined as a decline in individual fitness at low population size or density, that can result in critical population thresholds below which populations crash to extinction.**
- There are a variety of mechanisms that can create Allee effects, including mating systems, predation, environmental modification, and social interactions among others.
- As such, they are very relevant to many conservation programmes, where scientists and managers are often working with populations that have been reduced to low densities or small numbers.
- An ecotone is a transition area between two biological communities, where two communities meet and integrate. An ecotone may appear on the ground as a gradual blending of the two communities across a broad area, or it may manifest itself as a sharp boundary line. Other factors can illustrate or obscure an ecotone, for example, migration and the establishment of new plants. These are known as **spatial mass effects, which are noticeable because some organisms will not be able to form self-sustaining populations if they cross the ecotone.** If different species can survive in both communities of the two biomes, then the ecotone is considered to have species richness;
- In conservation biology, a **flagship species is a species chosen to raise support for biodiversity conservation** in a given place or social context. It tends to focus on the strategic goals and the socio-economic nature of the concept, to support the marketing of a conservation effort. The species need to be popular, to work as symbols or icons, and to stimulate people to provide money or support
- **Allelopathy** is a biological phenomenon by which an organism produces one or more biochemicals that influence the germination, growth, survival, and reproduction of other organisms.

Q 36.C

- The Ikshvaku dynasty (c. 225-340 A.D) was a feudatory tribe under the patronage of the great **Satavahana Empire** that ruled the Andhra region, the delta of the Krishna and Godavari rivers on the east coast. Their capital was the city of **Vijayapuri (Nagarjunakonda). Hence statements 1 and 2 are correct.**
- The **downfall of the Satavahansa around the 3rd century C.E** due to the internal skirmishes of its feudatories- the Abhiras, Traikutas, Brihatphalayans, and the salankayanas in order to gain power and the internal confusion rising due to such circumstances **strengthened the hold of the Ikshvakus**.

- The **Amravati school of art** flourished in the region of Andhra Pradesh between the lower valleys of rivers Krishna and Godavari. The main patrons of this art form were the Satavahans but it carried on even later, **patronized by their successor Ikshavaku rulers**. This art is said to have flourished between 150 BC and 350 AD. **Hence statement 3 is correct.**

Q 37.A

- **The Ministry of Culture has taken up the project under the National Mission for Manuscripts (NMM) of reprinting of 108 volumes of Mongolian Kanjur**. It is expected that all Mongolian Kanjur 108 volumes will be published by March 2022.
- **Mongolian Kanjur is the Buddhist canonical text which is considered to be the most important religious text in Mongolia**. 'Kanjur' in the Mongolian language means 'Concise Orders' that is the words of Lord Buddha in particular. The language of the Kanjur is Classical Mongolian and there are 108 volumes.
- It is held in high esteem by the Mongolian Buddhists and that they worship the Kanjur at temples and recite the lines of Kanjur in their daily life or a part of their lifestyle as a sacred ritual. Almost in every Monastery in Mongolia, the Kanjur are kept. Let us tell you that the Mongolian Kanjur has been translated from Tibetan (Kangyur). In fact, the Mongolian Kanjur is a source of providing a cultural identity to Mongolia.

Q 38.B

- **The Rabari people are an ethnic group of primarily India. They are also known as Rebari, Raikas, and Dewasi. They tend to be pastoralists and are in north, central, and western states of India such as Gujarat, Rajasthan, and Punjab, as well as Sindh in Pakistan.** Recently, The government of Gujarat has decided to constitute a five member committee to decide the rightful beneficiaries of Rabari, Barwad and Charan communities residing in Barda and Alech forests. **Hence pair 1 is not correctly matched.**
- **The Siddi**, also known as Sidi, Siddhi, Sheedi or Habshi, are an ethnic group inhabiting India and Pakistan who have **descended from the Bantu peoples of the East African region**. Some were merchants, sailors, indentured servants, slaves and mercenaries. **Recently, Shantaram Budna Siddi, a member of the Siddhi community, become the first person from the Siddhi tribal community to be nominated to the Karnataka Legislative Council. Hence pair 2 is correctly matched.**
- Recently, Arunachal Pradesh Chief Minister Pema Khandu released a book titled Tangams: An Ethnolinguistic Study Of The Critically Endangered Group of Arunachal Pradesh. **The Tangams are a little-known community within the larger Adi tribe of Arunachal Pradesh and reside in the hamlet of Kugging in Upper Siang district's Paindem circle.** Tangams are now concentrated in only one village (Kugging), with 253 reported speakers. As per the UNESCO World Atlas of Endangered Languages (2009), **Tangam — an oral language that belongs to the Tani group, under the greater Tibeto-Burman language family — is marked 'critically endangered'. Hence pair 3 is not correctly matched.**

Q 39.D

- **Coir is a 100% natural fiber,** obtained from a **renewable source – the coconut husk.**
- Coir Geo Textile is **naturally resistant to rot, molds and moisture, and free from any microbial attack** hence it needs no chemical treatment.
- It has a **permeable, natural, and strong fabric with high durability.**
- It protects the land surface and promotes quick vegetation.
- It is **totally biodegradable** and helps in soil stabilization.
- It can **dissipate the energy of flowing water, reducing soil erosion**
- It can absorb **excess solar radiation.**
- **Hence all the statements are correct.**
- **Recent Context:** National Rural Infrastructure Development Agency (NRIDA) has recently announced that coir geotextiles will be used for the construction of rural roads under the Pradhan Mantri Gram Sadak Yojana (PMGSY-III).
- Geo Textiles are permeable fabrics which, when used in association with soil, have the ability to separate, filter, reinforce, protect, or drain. These are typically made from polypropylene or polyester.

Q 40.D

- Readymade garment exports of Bangladesh fell 18.1% to $27.95 billion in FY20 because of the negative impact of COVID-19. Yet, it continues to export more readymade garments than India. The reasons for lower exports of garments from India include:

- One of the major reasons for Bangladesh's competitiveness is that it is cheaper to produce goods in Bangladesh than in India. According to a study, "the **unit labor cost of producing a cotton shirt in the United States is around $7, while the unit labor cost of producing the same shirt in India comes down to 50 percent, whereas in Bangladesh the unit labor cost is only 22 cents". Hence statement 1 is correct.**
- According to the Economic Survey of 2019-20: "**Bangladesh has more than 80% of the market value of exports by large enterprises, India has 80% by small enterprises."** Readymade garment exporters in Bangladesh, therefore, have economies of scale. **Hence statement 2 is not correct.**
- **The turnaround time of Indian firms from order to delivery is 63 days. In Bangladesh, this turnaround time is far less at 50 days. Hence statement 3 is correct.**
- It takes only one day for a consignment to reach a port in Bangladesh. In India, it can take as many as 10 days for a consignment to reach a port.

Q 41.C

- **One Trillion Trees Initiative (1t.org) is a World Economic Forum (WEF) initiative**, designed to support the UN Decade on Ecosystem Restoration 2021-2030, led by UNEP and FAO.
- 1t.org exists to connect, empower and mobilize a global reforestation community of millions, unleashing their potential to act at an unprecedented scale and speed, to ensure the conservation and restoration of one trillion trees within this decade

Q 42.A

- **Statement 1 is correct and statement 2 is not correct. In the joint working group meeting of the Sustainable Growth Pillar (between India and USA) recently an India Energy Modeling Forum was launched. There exist energy modelling forums in different parts of the World. The Energy Modelling Forum (EMF) in USA was established in 1976 at Stanford University to connect leading modelling experts and decision-makers from government, industry, universities, and other research organizations.** The forum provides an unbiased platform to discuss the contemporary issues revolving around energy and environment.
- **In India, there was no formalized and systematic process of having a modelling forum.** Even then, various think-tanks/research organizations like TERI, IRADe, CSTEP, CEEW, NCAER, etc., have been consistently developing scenarios and contributing through modelling studies and analyses to provide required inputs to MoEF&CC and other relevant ministries, including NITI Aayog. NITI Aayog will initially coordinate the activities of the forum and finalizing its governing structure. The forum would include knowledge partners, data agencies and concerned government ministries.
- The India Energy Modelling Forum will accelerate this effort and aim to:
  - Provide a platform to examine important energy and environmental-related issues;
  - Inform decision-making process to the Indian government;
  - Improve cooperation between modelling teams, government, and knowledge partners, funders;
  - Facilitate the exchange of ideas, ensure production of high-quality studies;
  - Identify knowledge gaps at different levels and across different areas;
  - Build the capacity of Indian institutions.

Q 43.C

- **Both statements are correct.**
- Just six months before the Montford Reforms were to be put into effect, two bills were introduced in the Imperial Legislative Council. One of them was dropped, but the other—an extension to the Defence of India Regulations Act 1915—was passed in March 1919. **It was officially called the Anarchical and Revolutionary Crimes Act, but popularly known as the Rowlatt Act.**
- **All the elected Indian members of the Imperial Legislative Council voted against the bill** but they were in a minority and easily overruled by the official nominees. All the elected Indian members—who included Mohammed Ali Jinnah, Madan Mohan Malaviya, and Mazhar Ul Haq – resigned in protest.
- **The act allowed political activists to be tried without juries or even imprisoned without trial**. It allowed the arrest of Indians without a warrant on the mere suspicion of 'treason'. Such suspects could be tried in secrecy without recourse to legal help. A special cell consisting of three high court judges was to try such suspects and there was no court of appeal above that panel. This panel could even accept evidence not acceptable under the Indian Evidences Act. The law of habeas corpus, the basis of civil liberty, was sought to be suspended. The object of the government was to replace the repressive provisions of the wartime Defence of India Act (1915) by a permanent law.

- Gandhi, who had been at the forefront in offering cooperation in the British war effort, and who had even offered to encourage recruitment of Indians into the British Indian forces. He called the Rowlatt Act the "Black Act" and argued that not everyone should get punishment in response to isolated political crimes.
- Gandhi called for a mass protest at all India level. But soon, having seen the constitutional protest meet with ruthless repression, **Gandhi organised a Satyagraha Sabha and roped in younger members of Home Rule Leagues** and the Pan Islamists. The forms of protest finally chosen included observance of a nationwide hartal (strike) accompanied by fasting and prayer, and civil disobedience against specific laws, and courting arrest and imprisonment.

Q 44.B

- India is blessed with an immense amount of hydro-electric potential. As per the assessment made by Central Electricity Authority (CEA), India is endowed with economically exploitable hydropower potential to the tune of 1,48,700 MW of installed capacity.
- According to International Hydropower Association (IHA), India has overtaken Japan becoming the nation with the **fifth-largest hydropower production capacity in the world** with its total installed base now standing at over 50 Gigawatt (GW), behind Canada, US, Brazil, and China. **Hence, statement 1 is not correct.**
- Advantage of Hydro-power:
  - A renewable source of energy - saves scarce fuel reserves.
  - Non-polluting and hence environment friendly.
  - Long-life - The first hydro project completed in 1897 is still in operation at Darjeeling is still in operation.
  - The cost of generation, operation and maintenance is lower than the other sources of energy.
  - The ability to start and stop quickly and instantaneous load acceptance/rejection makes it suitable to meet peak demand and for enhancing system reliability and stability.
  - Has higher efficiency (over 90%) compared to thermal (35%) and gas (around 50%).
  - The cost of generation is free from inflationary effects after the initial installation.
- The hydropower generation is a highly capital-intensive mode of electricity generation but being a renewable source of energy with no consumables involved; there is a very little recurring cost and hence no high long term expenditure. It is cheaper as compared to electricity generated from coal and gas-fired plants. It also reduces the financial losses due to frequency fluctuations and it is more reliable as it is inflation-free due to not usage of fossil fuel. **Hence, statement 2 is correct.**

Q 45.A

- **Khazans are coastal wetlands of Goa**. Traditional Khazan technology protects agricultural fields and villages from salinity intrusion, inundation and floods. Recently it was reported that lands under the estuarine agricultural system, called Khazan farming, are in a state of decay.
- Khazan dykes are built of mud from fields. Outer walls or protective dykes are very thick to sustain pressure of riverine water flow. A trench (chanoy) is made in between the two walls of the protective dyke and is filled with clay from the fields, which serves as a cementing substance. The dyke is covered with a layer of clay and mud from fields, called as tharcupto. Protective dykes are interrupted by installation of sluice gates, which connect an inner reservoir to the estuary.
- In this system, every bit of space was precious and used efficiently — the bunds were used to grow a variety of vegetables. The Khazan system allowed for the farmer and the fisher to harmoniously coexist and was the key to sustaining what is considered Goa's staple — fish, curry and rice.

Q 46.D

- **Gopal Hari Deshmukh (1823-1892)** was a social reformer and rationalist from Maharashtra. He held the post of a judge under the British raj but wrote for a weekly Prabhakar under the pen name of Lokahitawadi on social reform issues. He advocated a reorganization of Indian society on rational principles and modern, humanistic, secular values. He attacked Hindu orthodoxy and supported social and religious equality. He wrote against the evils of the caste system. He said, "If religion does not sanction social reform, then change religion." He started a weekly, Hitechhu, and also played a leading role in founding the periodicals, Gyan Prakash, Indu Prakash and Lokahitawadi. **Hence option (d) is the correct answer.**
- **Balshastri Jambhekar**, also known as Father of Marathi journalism for his efforts in starting journalism in Marathi language with the first newspaper in the language named 'Darpan'. He wanted to build a society having a scientific outlook. He was one of those social activists who made continuous effort in generating useful and healthy consciousness amongst the common masses and attempted to educate the uneducated.

- **Jyotirao Govindrao Phule** was an Indian social activist, thinker, anti-caste social reformer and writer from Maharashtra. His work extended to many fields, including eradication of untouchability and the caste system, and women's emancipation. He is mostly known for his efforts in educating women and lower caste people.
- **Gopal Krishna Gokhale** was an Indian liberal political leader and a social reformer during the Indian Independence Movement. Gokhale was a senior leader of the Indian National Congress and the founder of the Servants of India Society.

Q 47.C

- **Global Forest Resources Assessment 2020 has been released by the United Nations Food and Agriculture Organization (FAO). Hence statement 1 is correct.**
- The FRA 2020 has examined the status of, and trends in, more than 60 forest-related variables in 236 countries and territories in the period 1990–2020.

Key findings:

- Forest area has declined all across the world in the past three decades. The world lost 178 mha of forest since 1990, an area the size of Libya. **Hence statement 2 is not correct.**
- The rate of forest loss has also declined due to the growth of sustainable management.

Highest loss and highest gains:

- Africa had the largest annual rate of net forest loss in 2010–2020, at 3.9 mha, followed by South America, at 2.6 mha. **On the other hand, Asia had the highest net gain of forest area in 2010–2020, followed by Oceania and Europe. Hence statement 3 is correct.**

Q 48.D

- The **Narcondam hornbill** (Rhyticeros narcondami) is one of the species of hornbill.
- It is **endemic to the dormant volcanic island of Narcondam** in the North Andamans and found nowhere else in the world.
- The island was **notified as a wildlife sanctuary** to protect the species.
- The Narcondam hornbill has the smallest home range out of all the species of Asian hornbills and has **one of the smallest natural ranges** of any bird species in the world.
- It is **listed as Endangered** because it is suspected that its very small population, which is restricted to one tiny island, consists of fewer than 250 mature individuals.
- It is also **protected under Schedule 1 of the Wildlife Protection Act**.
- The hornbill is predominantly frugivorous. Being predominantly fruit eaters, they play an important role in the seed dispersal of figs and other plant species. Figs are important in the ecology of many other insular hornbill species and are a major factor determining the distribution patterns of hornbills in forests.
- The bird face significant **threats from hunting, logging and habitat loss**. Few years back there was a proposal by the Indian Coast Guard to install a static radar on Narcondam in the Andaman and Nicobar Islands. However, the project was not approved by the environment ministry.
- **Andaman wood pigeon** is endemic to the Andaman and Nicobar Islands. It is classified as not threatened.
- **The Nicobar parakeet**, also known as the Blyth's parakeet, is a parrot endemic to the Nicobar Islands of the Indian Ocean. It is one of the largest parakeets. It is classified as not threatened.
- **White-headed starling,** also known as the Andaman white-headed starling. It is found in wooded habitats of the Andaman and Nicobar Islands. It is classified as Least Concerned.

Q 49.C

- **Recent Context:** In June, 2020 the World Bank has operationalised a Solar Risk Mitigation Initiative (SRMI) with $333 million for 22 African countries. The idea was incubated as the Common Risk Mitigation Mechanism by the International Solar Alliance
- **The World Bank– Energy Sector Management Assistance Program (WB-ESMAP), in partnership with, Agence Française de Développement (AFD), International Renewable Energy Agency (IRENA) and International Solar Alliance (ISA) developed the Solar Risk Mitigation Initiative (SRMI or "the Initiative").** It is supported by a Stakeholders Group that includes the African Development Bank (AfDB), the European Investment Bank (EIB), and the Kreditanstalt für Wiederaufbau (KfW). **SRMI helps countries develop and implement their grid-connected and off-grid solar targets by mitigating risks inherent (i) to solar deployment and (ii) to attract private capital.**
- Achieving the global goals for access to energy and mitigation of climate change will require a quadrupling of present levels of solar photovoltaic (PV) generation in the developing world by 2025 to reach around 950 gigawatts (GW). This represents an investment of more than US$500 billion in new solar PV generation alone. To reach this objective, large amounts of private funding will have to be unlocked to complement the limited public financing available. Thus, **SRMI aims to support countries in developing sustainable solar programs that will attract private investments and so reduce**

reliance on public finances. This unique approach offers development and climate financing (credit enhancement) for:
  - technical assistance to help countries develop evidence-based solar targets, implement a sustainable solar program, and maintain robust procurement processes with transaction advisors;
  - critical public investments to enable the integration of variable renewable energy (VRE), finance solar park infrastructure, and increase access to electricity; and
  - risk mitigation instruments to cover residual risks perceived by private investors.
- SRMI has three components to mitigate the risk of solar deployment:
  - Sustainable Solar Targets: supporting the development of sustainable renewable roadmaps with medium-term targets based on sound planning and resource assessments, and providing concessional climate finance blended with development finance and technical support to ensure that countries have the right enabling environment to reduce country risk;
  - Transparent Procurement: supporting the selection of private sector developers and investors in a competitive and transparent manner to address country and project risk; and
  - Viable Risk Mitigation Coverage: developing viable risk mitigation coverage to cover residual project risks targeting solar (grid and off-grid) and storage deployment financed and operated by private investors.
- Dedicated financing will be raised to support a technical assistance program as well as investment lending and risk mitigation coverage to implement the roadmaps. Concessional climate finance is expected to play a key role in new lending for grid infrastructure upgrades and the development of solar parks as well as to support innovative risk mitigation coverage by leveraging the resources of development finance institutions.

Q 50.A

- India's space journey began after Dr Vikram Sarabhai formed Indian National Committee for Space Research (INCOSPAR) in 1962, a time when 'space' as scientific field had emerged as the next frontier for human race. At that time, the United States and Soviet Union were leading the space dominance. In 1969, INCOSPAR was renamed as ISRO (Indian Space Research organisation). ISRO built India's first satellite, Aryabhata, which was launched by the Soviet Union on April 19, 1975. Rohini became the first satellite to be placed into orbit by an Indian-made launch vehicle, SLV-3.
- **India launched Mars Orbiter Mission on 5 November 2013 and entered Mars' orbit on 24 September, 2014, making India the first nation to succeed on its maiden attempt to Mars. Hence statement 1 is correct.** ISRO became the fourth space agency in the world, as well as the first space agency in Asia, to reach the Mars orbit.
- The International Space Station is a high-flying laboratory that supports a wide range of scientific inquiry. **The ISS consists of Canada, Japan, the Russian Federation, the United States, and eleven Member States of the European Space Agency (Belgium, Denmark, France, Germany, Italy, The Netherlands, Norway, Spain, Sweden, Switzerland and the United Kingdom).** The proposed Indian space station would be similar to the International Space Station (ISS) but smaller in size weighing about 20 tonnes and would take another 5 to 7 seven years to construct. **Hence statement 2 is not correct.**

Q 51.D

- Samudragupta was succeeded by his son Chandragupta II (AD 375–414) also known as Chandragupta Vikramaditya, he not only extended his father's empire but also consolidated his position through matrimonial alliances with other royal dynasties of the period.
- His greatest military achievement was his victory over the Shaka kings who were ruling in western India for the last three hundred years. This conquest made the Gupta empire reach up to the western coast.
- **An iron pillar inscription at Mehrauli in Delhi indicates that his empire included even north-western India and Bengal**. He took the title of Vikramaditya i.e. the one who is as powerful as the sun. Chandragupta II is remembered for his patronage of art and literature.
- **He is credited with maintaining nine luminaries (navaratna) in his court. The great Sanskrit poet and playwright Kalidasa was the most notable of them all**.
- **The Chinese Buddhist pilgrim Fa Hien (AD 404–411) visited India during his reign**. He has left an account of the life of people in India in the fifth century AD.

Q 52.D

- Thunderstorms are caused by intense convection on moist hot days. They are a type of severe local storms. It is a **well-grown cumulonimbus cloud producing thunder and lightning. Hence statement 2 is correct.**

- A thunderstorm is characterized by **intense updraft of rising warm air**, which causes the clouds to grow bigger and rise to greater height. This causes precipitation. Later, **downdraft brings down to earth the cool air** and the rain. **Hence statements 1 and 3 are correct.**
- Warm air being lighter always rises whereas cold air being heavier is always descends.
- When the clouds extend to heights where sub-zero temperature prevails, hails are formed and they come down as hailstorm. If there is insufficient moisture, a thunderstorm can generate dust-storms.

Q 53.B

- The National Commission for Protection of Child Rights is a statutory body established by an Act of Parliament, the **Commission for Protection of Child Rights Act, 2005.** The Commission works under the aegis of the Ministry of Women and Child Development. **Hence statement 1 is not correct.**
- National Commission for Protection of Child Rights (NCPCR) emphasizes the principle of universality and inviolability of child rights and recognizes the tone of urgency in all the child-related policies of the country. For the Commission, the protection of all **children in the 0 to 18 years age group** is of equal importance.
- The Commission shall perform the following functions, namely:
  - Examine and review the safeguards provided by any law for the protection of child rights and recommend measures for their effective implementation.
  - Present to the central government, reports upon working of those safeguards;
  - Inquire into violation of child rights
  - Examine all factors that inhibit the enjoyment of rights of children affected by terrorism, communal violence, riots,
  - Look into matters relating to children in need of special care and protection etc.
- **The National Commission for Protection of Child Rights (NCPCR) has been designated as the agency** to monitor provisions of the Right to Free and **Compulsory Education (RTE) Act**. Under the Act, NCPCR can investigate complaints and have the powers of a civil court in trying cases. **Hence statement 2 is correct.**

Q 54.A

- A chit fund is a type of saving scheme where a specified number of subscribers contribute payments in installment over a defined period. Each subscriber is entitled to a prize amount determined by lot, auction or tender depending on the nature of the chit fund. It is a kind of savings scheme.
- These schemes are very popular in tier II and III towns in India and even in rural India as they are a way of raising quick money or catering for sudden liquidity needs.
- There are many organized companies incorporated to do this as a business and these are governed by state or central laws. There is a central Chit Funds Act of 1982, apart from a number of state chit fund Acts. There is an office of “registrar of chit funds" in every state that monitors operations which are quite stringent.
- Classifying them as contracts, the Supreme Court has read chit funds as being part of the Concurrent List of the Indian Constitution; hence both the center and state can frame legislation regarding chit funds. States like Tamil Nadu, Andhra Pradesh, and Kerala had enacted legislation (e.g. The Kerala Chitties Act, 1975 and The Tamil Nadu Chit Funds Act, 1961) for regulating chit funds. **Hence, statement 1 is correct.**
- Ministry of Finance enacted the Chit Funds Act 1982, to regulate the sector. Under the Act, states are responsible for notifying rules and have the power to exempt certain chit funds from the provisions of the Act. Under the Act, all chit funds require the previous sanction from the state government. **Hence, statement 2 is correct.**
- The Chit fund industry is facing a crisis with dropping margins due to higher GST rates. The 12% GST levy increases the cost of borrowings for chit members thus making the fund expensive. **Hence, statement 3 is not correct.**

Q 55.A

- Compulsory licenses are authorizations given to a third-party by the Government to make, use or sell a particular product or use a particular process that has been patented, without the need of the permission of the patent owner. The provisions regarding compulsory licenses are given in the Indian Patents Act, 1970, and in the TRIPS (Trade-Related Aspects of Intellectual Property Rights) Agreement at the International level. **Hence, statement 1 is correct.**
- Under the Indian Patents Act, 1970 the provisions of ‘compulsory license’ are specifically given under Chapter XVI. A compulsory license can be granted on any of the following grounds, namely:

- that the reasonable requirements of the public with respect to the patented invention have not been satisfied, or
- that the patented invention is not available to the public at a reasonably affordable price, or
- that the patented invention is not worked in the territory of India

- Additionally, according to Section 92 of the Act, compulsory licenses can also be issued suo motu by the Controller of Patents pursuant to a notification issued by the Central Government if there is either a "national emergency" or "extreme urgency" or in cases of "public non-commercial use". **Hence, statement 3 is not correct.**
- The TRIPS agreement allows compulsory licensing as part of the agreement's overall attempt to strike a balance between promoting access to existing drugs and promoting research and development into new drugs. But the term "compulsory licensing" does not appear in the TRIPS Agreement. Instead, the phrase "other use without authorization of the right holder" appears in the title of Article 31. Compulsory licensing is only part of this since "other use" includes use by governments for their own purposes. **Hence, statement 2 is not correct.**
- Compulsory licensing and government use of a patent without the authorization of its owner can only be done under a number of conditions aimed at protecting the legitimate interests of the patent holder.

Q 56.B

- **Chak Hao**- is the **black rice variety of Manipur. Hence, statement 1 is not correct.**
- It was recently **given GI tag recognition. Hence, statement 3 is correct.**
- **It has also been used by traditional medical practitioners as part of traditional medicine. Hence, statement 2 is correct.**
- It has been in use for centuries in north-east India.
- It has been in use for centuries and is cultivated by traditional methods. It is **either cultivated by direct sowing of pre-soaked seeds or by transplantation of seedlings in puddled fields** in the wetland regions.
- The rice is mainly eaten during festivals and is used for the preparation of the Chak Hao Kheer.

Features :

- It is an **aromatic rice variety**.
- It is glutinous in nature and dark-colored.
- It requires **the longest cooking time- 40 to 45 minutes.** This is because of the high crude fiber content and the presence of the bran layer.
- It is reported to have medicinal value and is hence used in traditional medicine.

Q 57.B

- **Species diversity** is defined as the number of species and abundance of each species that live in a particular location. Abundance is the number of individuals of each species. Since the number of species are same in both forest, but forest 2 has a higher relative abundance of each species than forest A. **Hence, forest B is more diverse than A.**
- **Species evenness** refers to how close in numbers each species in an environment is So if there are 50 members of species 1 and 500 members of species 2, the community is not very even compared to higher evenness when there are 60 members of species 1 and 70 members of species 2. **Hence, forest B is more even than A.**
- **Species richness** is the number of different species represented in an ecological community, landscape or region. Species richness is simply a count of species, and it does not take into account the abundances of the species or their relative abundance distributions. **Hence, both the forests are equally species-rich.**

Q 58.B

- After their arrival in India, the **Dutch founded their first factory in Masulipatnam (in Andhra) in 1605**. They went on to establish trading centers in different parts of India and thus became a threat to the Portuguese. They captured Nagapatam near Madras (Chennai) from the Portuguese and made it their main stronghold in South India. (It was the **Portuguese** who first discovered a direct sea route to India. Portuguese sailor Vasco da Gama arrived at Calicut an important seaport located on South-West India in **1498**).
- Participating in the redistributive or carrying trade, they brought to the islands of the Far East various articles and merchandise from India. They carried indigo manufactured in the Yamuna valley and Central India, **textiles and silk from Bengal, Gujarat and the Coromandel, saltpeter from Bihar and opium, and rice from the Ganga valley**.
- **Hence only statement 3 is correct.**

Q 59.C

- **Statement 1 is correct and statement 2 is not correct: A serological survey is conducted to assess the prevalence of a disease in a population.** It is done by detecting the presence of specific antibodies that are produced against the virus. **A serological survey includes the IgG Enzyme-Linked Immunosorbent Assay (ELISA) test.** Recently it was estimated to assess the proportion of the population exposed to SARS-CoV-2 infection.
- Recently, in the Delhi serological survey, blood samples of 21,387 people were taken at random. It was found that 22.86% among them had developed antibodies against COVID-19. The results show that a significant proportion of the population is still vulnerable in contracting the virus.

Q 60.A

- The state judiciary consists of a high court and a hierarchy of subordinate courts, also known as lower courts. They function below and under the high court at district and lower levels.
- The appointment, posting, and promotion of district judges in a state are made by the governor of the state in consultation with the high court. A person to be appointed as district judge should have the following qualifications:
  - He should not already be in the service of the Central or the state government.
  - He **should have been an advocate or a pleader for seven years. Hence statement 3 is correct.**
  - He should be recommended by the high court for appointment.
- **As per Article 235, the control over district courts** and other subordinate courts including the posting, promotion, and leave of persons belonging to the **judicial service of a state** and holding any post inferior to the post of district judge is **vested in the high court. Hence statement 1 is not correct.**
- The district judge is the highest judicial authority in the district. She possesses original and appellate jurisdiction in both civil as well as criminal matters. The district judge exercises both judicial and administrative powers. She also has supervisory powers over all the subordinate courts in the district.
- **When a district judge** deals with civil cases, she is known as the district judge and when she hears the **criminal cases, she is called the sessions judge.**
- Appeals against his orders and judgments lie to the High Court. **The sessions judge has the power to impose any sentence including life imprisonment and capital punishment (death sentence).** However, a capital punishment passed by him is subject to confirmation by the High Court, whether there is an appeal or not. **Hence statement 2 is not correct.**

Q 61.A

- This policy seeks to accomplish the vision of 'Make in India' with the objective of nation-building and encourage domestic manufacturing. The policy mandates to provide preference to Domestically Manufactured Iron & Steel Products (DMI&SP) in government procurement. The policy is applicable on all government tenders where price bid is yet to be opened.
- Domestically Manufactured Iron and Steel Products (DMI&SP) policy aim to boost the use of domestic steel products. This policy provides preference to Domestically Manufactured Iron and Steel Products (DMI&SP) in Government procurement. The policy is envisaged to reduce the inclination to use, low-quality low cost imported steel in government-funded projects. It shall be the responsibility of every government agency to ensure implementation of the policy. **Hence, statement 1 is correct.**
- The policy is applicable to every Ministry or Department of Government and all agencies/entities under their administrative control for purchase of iron & steel products for government projects and not with a view to commercial resale or with a view to using in the production of goods for commercial sale.
- This policy defines Domestically Manufactured Iron & Steel Products (DMI&SP)" are those iron and steel products which are manufactured by entities that are registered and established in India, including in Special Economic Zones (SEZs). **Hence, statement 2 is correct.**
- **A Standing Committee under the Ministry of Steel (MoS) to be chaired by the Secretary (Steel), shall be constituted to oversee the implementation of the policy.** The Committee shall comprise of experts drawn from Industry / Industry Association / Government Institution or Body / Ministry of Steel (MoS). **Hence statement 3 is not correct.**
- While implementing the policy, it poses trust on each domestic manufacturer who shall provide self-certification to the procuring Government agency declaring that the iron & steel products are domestically manufactured in terms of the domestic value addition prescribed.
- Only iron & steel products having aggregated estimate value of INR 50Crores and more forming part of the steel-intensive project or overall project shall be covered under the policy.

- There are provisions in the policy for waivers to all such procurements, where specific grades of steel are not manufactured in the country, or the quantities as per the demand of the project cannot be met through domestic sources.
- Recently, Union Steel Minister said that country has avoided steel imports worth over Rs 20,000 crore following DMISP policy since its launch.

Q 62.C

- **Recent Context:** Chief Minister of Maharashtra was elected unopposed to Maharashtra Legislative Council. CM took oath on November 28, 2019, and he had to become a member of the State legislature before May 28, 2020.
- The Constitution **does not contain any specific procedure** for the selection and appointment of the Chief Minister. **Hence statement 1 is correct.**
- **Article 164 only says that the Chief Minister shall be appointed by the governor.**
- However, **this does not imply that the governor is free to appoint anyone** as the Chief Minister. In accordance with the conventions of the parliamentary system of government, **the governor has to appoint the leader of the majority party in the state legislative assembly as the Chief Minister**.
- But, **when no party has a clear majority** in the assembly, then the **governor may exercise his personal discretion** in the selection and appointment of the Chief Minister. In such a situation, **the governor usually appoints the leader of the largest party or coalition** in the assembly as the Chief Minister and **ask him to seek a vote of confidence in the House within a month**.
- The **governor** may have to exercise his **individual judgment in** the selection and appointed of the Chief Minister **when the chief minister in office dies suddenly and there is no obvious successor.** However, on the death of a Chief Minister, the ruling party usually elects a new leader and the governor has no choice but to appoint him as Chief Minister.
- The **Constitution does not require that a person must prove his majority in the legislative assembly before he is appointed as the Chief Minister**. **Hence, statement 2 is not correct.**
- The governor may first appoint him as the Chief Minister and **then ask him to prove his majority in the legislative assembly within a reasonable period**.
- A person **who is not a member of the state legislature can be appointed as Chief Minister for six months, within which time, he should be elected to the state legislature, failing which he ceases to be the Chief Minister**. **Hence, statement 3 is correct.**
- According to the Constitution, the Chief Minister **may be a member of any of the two Houses of a state legislature.**

Q 63.B

- **The Internet Corporation for Assigned Names and Numbers (ICANN)** is an **American multistakeholder group and nonprofit organization.** It was formed in 1998. It is a not-for-profit partnership of people from all over the world dedicated to keeping the Internet secure, stable and interoperable. It promotes competition and develops policy on the Internet's unique identifiers. ICANN doesn't control content on the Internet. It cannot stop spam and it doesn't deal with access to the Internet. But through its coordination role of the Internet's naming system, it does have an important impact on the expansion and evolution of the Internet. **Hence statement 1 is not correct.**
- The Internet Corporation for Assigned Names and Numbers (**ICANN**) helps coordinate **the Internet Assigned Numbers Authority (IANA) functions**, which are key technical services critical to the continued operations of the Internet's underlying address book, **the Domain Name System (DNS).** The IANA functions include:
  - the coordination of the assignment of technical protocol parameters including the management of the address and routing parameter area (ARPA) top-level domain
  - the administration of certain responsibilities associated with Internet DNS root zone management such as generic and country code top-Level Domains
  - the allocation of **Internet numbering resources**
  - **Hence statement 2 is correct.**
- In layman's terms - To reach another person on the Internet one has to type an address into computer -- a name or a number. That address must be unique so computers know where to find each other. ICANN coordinates these unique identifiers across the world. Without that coordination, we wouldn't have one global Internet.

Q 64.B

- The magnetic field of Earth is similar to that of a bar magnet. **The Earth's magnetic field is mostly caused by electric currents in the liquid outer core.** Convection of molten iron within the outer liquid core, along with a Coriolis effect caused by the overall planetary rotation, tends to organize these "electric currents" in rolls aligned along the north-south polar axis. When conducting fluid flows across an existing magnetic field, electric currents are induced, which in turn creates another magnetic field. When this magnetic field reinforces the original magnetic field, a dynamo is created that sustains itself. This is called the **Dynamo Theory and it explains how the Earth's magnetic field is sustained.**
- If the earth rotated faster, it would have a stronger magnetic field. If it had a larger liquid core it would also have a stronger magnetic field.
- The **magnetic poles of the earth are not fixed on the surface,** but wander quite a bit. By **dating the rocks on either side of the Mid-Atlantic Ridge,** geologists discovered that the polarity of the Earth's field changes over the course of thousands of years. It not only verified the theory of Continental Drift but demonstrated that earth's magnetism isn't constant over millions of years. The magnetic field of the earth actually changes its polarity over time. They are called **Polarity Reversals**, but should not be confused with the rotation axis of the earth actually changing. **Hence statement 1 is not correct.**
- A magnetosphere is a region around a planet dominated by the planet's magnetic field. The **magnetosphere shields our home planet from solar and cosmic particle radiation**, as well as erosion of the atmosphere by the solar wind - the constant flow of charged particles streaming off the sun. **Hence statement 2 is correct.**

Q 65.C

- Like the equator, the Arctic Circle is an imaginary line. **It's defined as the latitude above which the sun does not set on the day of the summer solstice (usually around June 21).** North of the Arctic Circle, periods of constant sunshine last for up to six months of the year at the North Pole. North of the Arctic Circle, periods of constant sunshine last for up to six months of the year at the North Pole. **Above the Arctic Circle, the sun never rises on the day of the winter solstice (usually around December 21).**
- There are several countries with areas within or that border the Arctic Circle. Many people call such areas “the land of the midnight sun," because in summer the sun can often be seen past midnight. Some of these areas include the northernmost parts of Canada, Greenland, Finland, Norway, Sweden, Russia, Alaska, and Iceland.
- The Arctic Circle is a parallel of latitude on the Earth at approximately 66.5 degrees north from the equator. On the day of the northern summer solstice (around June 21/22 each year), an observer on the Arctic Circle and higher latitudes will see the Sun above the horizon for a full 24 hours. **Hence only option 3 is correct.**

Q 66.A

- Recently, RBI proposed to review the guidelines on ownership, governance, and corporate structure of private sector banks in the backdrop of key developments in the space in recent years.
- The five-member internal working group to review the guidelines will be headed by RBI Central Board Director P K Mohanty. The committee shall submit its report by September 30, 2020. “The review would provide an opportunity to harmonize the norms applicable to banks set up at different time periods, irrespective of their date of commencement of business. **Hence, option (a) is correct.**
- The panel has been asked to review the extant licensing guidelines and regulations relating to ownership and control in Indian private sector banks and suggest appropriate norms, keeping in mind the issue of excessive concentration of ownership and control, as well as international practices and domestic requirements.
- It will also examine and review the “norms for promoter shareholding at the initial/licensing stage and subsequently, along with the timelines for dilution of the shareholding; and to identify any other issue germane to the subject matter and make recommendations thereon.
- The review of the promoter’s stake in private sector banks is significant in the wake of the out-of-court settlement between RBI and Kotak Mahindra Bank earlier this year.
- The Reserve Bank of India (RBI) constituted a high-level committee headed by former chairman of the Unique Identification Authority of India (UIDAI) Nandan Nilekani to set up a robust digital payment ecosystem in India.
- The Reserve Bank of India (RBI) set up a committee under former SEBI Chairman UK Sinha to address issues regarding the sustainability of Micro, Small and Medium Enterprises (MSMEs). This comes after RBI allowed a one-time restructuring of MSME loans of up to ₹25 crores.
- The Shekatkar Committee was set up to suggest reforms in armed forces.

Q 67.B

- **National Food Security Act 2013 (NFSA)**
- This marks a shift in approach to food security **from a welfare approach to a rights-based approach. Hence, statement 1 is not correct.**
- **The fundamental right to life enshrined in Article 21 of the Constitution is interpreted to include the right to live with human dignity, which includes the right to food and other basic necessities. Hence statement 3 is correct.**
- Act legally entitles up to **75% of the rural population and 50% of the urban population** to receive subsidized foodgrains under the Targeted Public Distribution System (TPDS). **Hence statement 2 is correct.**
- Under NFSA, about 81 crore persons are entitled to buy subsidized food grain, rice at Rs 3/kg, wheat at Rs 2/kg, and coarse grains at Re 1/kg — from their designated FPS of TPDS.
- It is operated **under the joint responsibility of Central and State Governments.**
  - **Central Government**- responsible for **allocation of foodgrains** to States/UTs, **transportation of foodgrains** up to designated depots, and providing **central assistance to States/UTs for delivery of foodgrains** from FCI godowns to the doorstep of FPSs.
  - **State Governments-** handle **operational responsibility** including **identification of eligible families** and issue of Ration Cards and **supervision of the functioning of Fair Price Shops (FPSs),** etc.,
- **Targeted Public distribution system:** It was launched in 1997 to focus on the poor. Under TPDS, beneficiaries are divided into 2 categories
  - Below Poverty Line-BPL Households
  - Above Poverty line- APL Households
- **Antyodaya Anna Yojana** was launched in 2000 to make TPDS more focused and targeted.
  - It focuses poorest of the poor families among BPL beneficiaries

Q 68.C

- **Option (c) is the correct answer:**
- **Rajmahal hills:** The Rajmahal Hills forming the northeastern edge of the Chotanagpur Plateau are mostly made of basalt and are covered by lava flows {Basaltic Lava}. This range is believed to be one of the oldest mountain ranges and the finest Jurassic-era fossil beds in the world. **Garo-Rajmahal Gap** separates the Meghalaya plateau from the main peninsular plateau.
- **Maikala Range:** It runs in a north-south direction and forms the eastern base of the triangular Satpura Range. **The Satpura-Maikala watershed is the second-largest in India.**
- **Mahadeo Hills:** are **sandstone hills** located in the northern part of the Satpura Range, in southern Madhya Pradesh state, central India. The hills have small plateaus and steep scarps. The hills have a **gentle northern slope but are steep to the south.**
- **Satmala hills:** run across Nashik District, Maharashtra. They are a**n integral part of the Sahyadris range within Nashik**

Q 69.C

- Water vapor is known to be Earth's most abundant greenhouse gas, but the extent of its contribution to global warming has been debated.
  Increasing water vapor leads to warmer temperatures, which causes more water vapor to be absorbed into the air. Warming and water absorption increase in a spiraling cycle. **Hence, statement 1 is correct.**
- Heat-amplifying effect of water vapor is potent enough to double the climate warming caused by increased levels of carbon dioxide in the atmosphere.
- If carbon dioxide is added to the atmosphere, then warming will result, however, the quantum of warming depends on the humidity in the atmosphere called as water vapor feedback.
- It can also amplify the warming effect of other greenhouse gases, such that the warming brought about by increased carbon dioxide allows more water vapor to enter the atmosphere.
- With the increase in the surface temperature atmospheric humidity also increases. And since water vapor is itself a greenhouse gas, the increase in humidity amplifies the warming from carbon dioxide. **Hence, statement 2 is correct.**

Q 70.A

- The requirement of personally being present in front of the disbursing agency or getting a life certificate often becomes a major hurdle in the process of seamless transfer of pension amount to the pensioner.
- **Digital Life Certificate for Pensioners Scheme of the Government of India known as Jeevan Pramaan** seeks to address this very problem by digitizing the whole process of securing the life

certificate. It aims to streamline the process of getting this certificate and making it hassle free and much easier for the pensioners. It is a **biometric enabled digital service for pensioners. Pensioners of Central Government, State Government or any other Government organization can take benefit of this facility. Hence statement 1 is correct and statement 2 is not correct.**

- With this initiative the pensioners requirement to physically present himself/herself in front of the disbursing agency or the certification authority will become a thing of the past benefiting the pensioners in a huge way and cutting down on unnecessary logistical hurdles.

Q 71.A

- Recently Gujarat Kakrapar-3 Atomic Power Plant (KAPP-3) attained criticality. It is India's first 700 MWe unit, and the biggest indigenously developed variant of the Pressurised Heavy Water Reactor.
- Nuclear reactors use uranium fuel rods—long, slender, zirconium metal tubes containing pellets of fissionable material to create energy through fission. Fission is the process of splitting the nuclei of uranium atoms to release neutrons that in turn split more atoms, releasing more neutrons.
- **Criticality means that a reactor is controlling a sustained fission chain reaction, where each fission event releases a sufficient number of neutrons to maintain an ongoing series of reactions. This is the normal state of nuclear power generation. Hence option (a) is the correct answer.**
- Fuel rods inside a nuclear reactor are producing and losing a constant number of neutrons, and the nuclear energy system is stable.

Q 72.C

- The Hindustan Republican Association/Army (HRA) was founded in October 1924 in Kanpur by Ramprasad Bismil, Jogesh Chandra Chatterjee and Sachin Sanyal, with an aim to organize an armed revolution to overthrow the colonial government and establish in its place the Federal Republic of United States of India whose basic principle would be an adult franchise.
- **The most important action of the HRA was the Kakori Robbery**. The men **held up the 8-Down train at Kakori, an obscure village near Lucknow, and looted its official railway cash**.
- Government crackdown after the Kakori robbery led to arrests of many, of whom 17 were jailed, four transported for life and **four—Ram Prasad Bismil, Ashfaqullah, Roshan Singh and Rajendra Lahiri—were hanged**. Kakori proved to be a setback.

Q 73.C

- External debt is the portion of a country's debt that is borrowed from foreign lenders, including commercial banks, governments, or international financial institutions. These loans, including interest, must usually be paid in the currency in which the loan was made.
- External debt can be obtained from foreign commercial banks, international financial institutions like IMF, World Bank, ADB etc, and from the government of foreign nations.
- The major developments relating to India's external debt as at end-March 2020 are presented below:
    - At end-March 2020, India's external debt was placed at US$ 558.5 billion, recording an increase of US$ 15.4 billion over its level at end-March 2019.
    - **Commercial borrowings remained the largest component of external debt, with a share of 39.4 percent, followed by non-resident deposits (23.4 percent).**
    - US dollar-denominated debt continued to be the largest component of India's external debt, with a share of 53.7 percent at end-March 2020, followed by the Indian rupee (31.9 percent), yen (5.6 percent), SDR (4.5 percent) and the euro (3.5 percent).
    - At the end of March 2020, Multilateral debt is at USD 60 Bn, whereas Rupee debt is at USD 1.2 Bn. **Hence, option (d) is correct.**

Table 1: External Debt - Outstanding and Variation

(US$ billion)

Component	Outstanding as at end of March			Absolute variation		Percentage variation	
	2018 R	2019 PR	2020 P	Mar-19 over Mar-18	Mar-20 over Mar-19	Mar-19 over Mar-18	Mar-20 over Mar-19
1	2	3	4	5	6	7	8
1. Multilateral	57.2	57.5	60.0	0.2	2.5	0.4	4.3
2. Bilateral	25.4	25.6	27.2	0.2	1.5	1.0	6.0
3. IMF	5.8	5.5	5.4	-0.3	-0.1	-4.5	-1.7
4. Trade Credit	9.5	7.9	7.2	-1.5	-0.8	-16.3	-9.5
5.Commercial Borrowings	201.8	206.6	220.3	4.8	13.8	2.4	6.7
6. Non-resident Deposits	126.2	130.4	130.6	4.2	0.2	3.4	0.1
7. Rupee Debt	1.2	1.2	1.0	-0.1	-0.1	-4.5	-11.7
8. Short-term Debt	102.2	108.4	106.9	6.2	-1.5	6.1	-1.4
Of which:							
Short-term trade credit	100.4	102.4	101.4	2.0	-1.0	2.0	-1.0
Total Debt	**529.3**	**543.1**	**558.5**	**13.8**	**15.4**	**2.6**	**2.8**
Memo Items:							
A. Long-term Debt (original maturity)@	427.1	434.7	451.7	7.6	17.0	1.8	3.9
B. Short-term Debt (original maturity)#	102.2	108.4	106.9	6.2	-1.5	6.1	-1.4

R: Revised. PR: Partially Revised. P: Provisional.

@: Debt with original maturity of above one year.

#: Debt with original maturity of up to one year.

Q 74.D

- **PRAGATI (Pro-Active Governance And Timely Implementation)** is aimed at starting a culture of Pro-Active Governance and Timely Implementation. It is a multi-purpose and multi-modal platform that is aimed at **addressing common man's grievances and simultaneously monitoring and reviewing important programmes** and projects of the Government of India as well as projects flagged by State Governments.
- The PRAGATI platform uniquely bundles three latest technologies: **Digital data management, video-conferencing, and geospatial technology.**
- It promotes **Cooperative federalism** as it is a **three-tier system (PMO, Union Government Secretaries, and Chief Secretaries of the States).** The system rides on, strengthens, and re-engineers the databases of the CPGRAMS for grievances, Project Monitoring Group (PMG), and the Ministry of Statistics and Programme Implementation. PRAGATI provides an interface and platform for all these three aspects.

Q 75.D

- The Kuka Movement was founded in 1840 by Bhagat Jawahar Mal (also called Sian Saheb) in western Punjab. A major leader of the movement after him was Baba Ram Singh. (He founded the Namdhari Sikh sect.)
- After the British took Punjab, the movement got transformed from a religious purification campaign to a political campaign. Its basic tenets were **abolition of caste and similar discriminations among Sikhs**, **discouraging the consumption of meat and alcohol and drugs**, **permission for intermarriages, widow remarriage**, and encouraging women to step out of seclusion.
- On the political side, the Kukas wanted to remove the British and restore Sikh rule over Punjab; they advocated wearing hand-woven clothes and **boycott of English laws and education and products**. So, the concepts of Swadeshi and non-cooperation were propagated by the Kukas, much before they became part of the Indian national movement in the early twentieth century.
- As the movement gained in popularity, the British took several steps to crush it in the period between 1863 and 1872.

Q 76.C

- National Payments Corporation of India (NPCI) has developed the National Electronic Toll Collection (NETC) program to meet the electronic tolling requirements of the Indian market. **Hence statement 1 is correct.** It **offers an interoperable nationwide toll payment solution** including clearinghouse services for settlement and dispute management. NETC enables a customer to use their FASTag as a payment mode on any of the toll plazas irrespective of who has acquired the toll plaza. **Hence statement 2 is not correct**.
- FASTag is a device that employs Radio Frequency Identification (RFID) technology for making toll payments directly while the vehicle is in motion. FASTag (RFID Tag) is affixed on the windscreen of the vehicle and enables a customer to make the toll payments directly from the account which is linked to FASTag. FASTag offers the convenience of cashless payment along with benefits like - savings on fuel and time as the customer does not has to stop at the toll plaza.
- **Subgoal of Government of India:**
  - Electronification of retail payments.
  - Reduce air pollution by reducing the congestion around toll plaza.
  - Reduce fuel consumption.
  - Reduce cash handling.
  - Enhance audit control by centralizing user account. **Hence Statement 3 is correct.**
- **About NPCI:**
  - The National Payments Corporation of India (NPCI) is a pioneer organization in the field of retail payments in India. It is a body promoted by RBI and has presently ten core promoter banks (State Bank of India, Punjab National Bank, Canara Bank, Bank of Baroda, Union Bank of India, Bank of India, ICICI Bank, HDFC Bank, Citibank, and HSBC). It has been incorporated as a Section 25 company under Companies Act and is aimed to operate for the benefit of all the member banks and their customers.
  - The vision of NPCI being able to provide citizens of our country anytime, anywhere payment services which are simple, easy to use, safe, and secure, fast and also cost-effective. NPCI aims to operate for the benefit of all the member banks and the common man at large.

Q 77.D

- National Plan for Conservation of Aquatic Ecosystems was launched after the merger of National Lake Conservation Plan (NLCP) and National Wetlands Conservation Programme (NWCP).
- It is a centrally sponsored scheme for conserving aquatic ecosystems namely, lakes and wetlands. **Hence, statement 1 is correct.**
- Conservation and management of mangroves and coral reefs shall continue to be guided by the Centrally Sponsored Scheme entitled Conservation and Management of Mangroves and Coral Reefs.
- The MoEF&CC is responsible for overall coordination of NPCA. NPCA is implemented by designated division of the Ministry. **Hence, statement 3 is correct.**
- Among others, its functioning include the followings:
  - Providing national policy framework for conservation and sustainable management of wetlands
  - Providing financial assistance (on cost sharing basis) for implementation of activities identified in the integrated management plans
- The primary responsibility for the conservation and sustainable management of wetlands will be with the State Governments/UT Administration. **Hence, statement 2 is correct.**
- The Wetlands Authorities within States / UTs, created as per provisions of Wetlands (Conservation and Management) Rules, 2017 will be nodal agency for all matters concerned with implementation of NPCA. The composition and functions of State/UT Wetlands Authority are laid down in the said Rules (Annexure III).
- The National Wetlands Committee (NWC), constituted under the provisions of the Wetlands (Conservation and Management) Rules, 2017 shall be the nodal advisory body for NPCA.

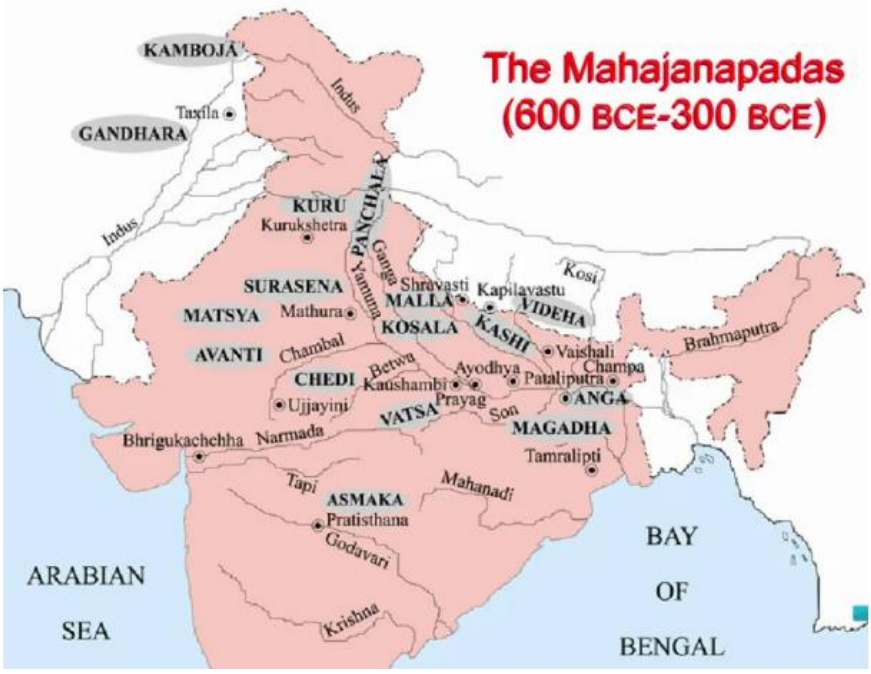
Q 78.A

- The composition of Legislative Councils is provided under Article 171.
- The members of the legislative council are indirectly elected. The maximum strength of the council is fixed at one-third of the total strength of the assembly and the minimum strength is fixed at 40.
- Of the total number of members of a legislative council, **1/6 are nominated by the governor** from amongst persons who have a special knowledge or practical experience of literature, science, art, cooperative movement and social service. **Hence statement 2 is not correct.**

- **Qualification for membership of a Legislative Council:**
  - A person shall not be qualified to be chosen to fill a seat in the Legislative Council of a State to be filled by election unless he is an elector for any Assembly constituency in that State.
  - A person shall not be qualified to be chosen to fill a seat in the Legislative Council of a State to **be filled by nomination by the Governor unless he is ordinarily resident in the State. Hence statement 1 is not correct.**
  - A resident individual will be treated as resident and ordinarily resident in India during the year if he satisfies the following conditions:
  - He is resident in India for at least 2 years out of 10 years immediately preceding the relevant year.
  - His stay in India is for 730 days or more during 7 years immediately preceding the relevant year.
- The legislative council is a continuing chamber. But, one-third of its members retire on the expiration of every second year. So, a member continues as such for six years. The vacant seats are filled up by fresh elections and nominations (by governor) at the beginning of every third year. **The retiring members** are also eligible for re-election and **re-nomination any number of times. Hence statement 3 is correct.**

Q 79.B

- The sixth century BC was not only a period of socio-economic and religious development but it also witnessed new political developments. In the later Vedic period, as we have seen earlier, people had started agriculture, which made them settle down at a particular place. These permanent settlements led to foundation of janapadas or territorial states under the control of the king.
- In the **sixth century BC** the main area of political activity gradually shifted from Western UP to Eastern UP and Bihar. This region was not only fertile on account of better rainfall and river systems but was also closer to iron production centres. **The use of better iron tools and weapons enabled some territorial states to become very large** and they came to be called **mahajanapadas**.
- **Most of them were situated north of Vindhyas, between Bihar in the east to the northwest frontier of the subcontinent**.
- Most of these states were monarchical in nature but some of them, called ganasangha, had an oligarcharical system of governance. In this system unlike monarchies, where a hereditary king rules, administration was run by an elected king with the help of a large council or assemblies comprising heads of all important clans and families. This system was certainly more democratic than monarchy, though the common man had no participation in the administration.
- The political fight among these mahajanapadas led ultimately to one of them namely Magadh to emerge as the most powerful state and the centre of a vast empire. The earliest important ruler of Magadh was the king Bimbisara, who ruled for 52 years from 544 BC to 492 BC.



Q 80.A

- **Storm surge is the abnormal rise in seawater level during a storm. Hence option (a) is the correct answer.**
- It is measured as the height of the water above the normal predicted astronomical tide.

- The surge is caused primarily by a storm's winds pushing water onshore.
- The amplitude of the storm surge at any given location depends on factors such as:orientation of the coastline with the storm track, the intensity, size, and speed of the storm, etc.
- The Loo is a strong, dusty, gusty, hot and dry summer wind from the west which blows over the western Indo-Gangetic Plain region of North India and Pakistan. It is especially strong in the months of May and June.

Q 81.A

- The finest examples of painting belonging to the first half of the 16th century are, represented by **a group of miniatures generally designated as the "Kulhadar Group"**. This group includes illustrations of the 'Chaurapanchasika' - "Fifty Verses of the Thief by Bilhan, the Gita Govinda, the Bhagavata Purana and Ragamala. The style of these miniatures is marked by the use of brilliant contrasting colours, vigorous and angular drawing, transparent drapery and the appearance of conical caps 'Kulha' on which turbans are worn by the male figures.
- An example of the Chaurapanchasika miniature shows Champavati standing near a lotus pond. This miniature belongs to the N.C. Mehta collection, Bombay. It was executed in the first quarter of the 6th century, probably in Mewar. The style of the painting is purely indigenous derived from the earlier tradition of the Western Indian art and does not show any influence of either the Persian or the Mughal style of painting.

Q 82.B

- Ayurveda is a well-known system of health science that was developed in ancient India.
- Ayurveda means 'Science of Life'. It deals with each and every aspect of human life. Its first objective is to maintain the health and happiness while the next is to manage and restore the status of health and productive state of mind. Ayurveda offers wonderful tools for better life style. It gives equal importance to our body, mind and soul; therefore works with holistic approach.
- Life in Ayurveda is conceived as the union of body, senses, mind and soul. The living man is a conglomeration of three humours (Vata, Pitta &Kapha), seven basic tissues (Rasa, Rakta, Mansa, Meda, Asthi, Majja & Shukra) and the waste products (Mala) of the body such as faeces, urine and sweat. Thus the total body matrix comprises of the humours, the tissues and the waste products of the body.
- **According to Ayurveda all objects in the universe including human body are composed of five basic elements (Panchamahabhutas) namely, Akash (Ether), Vayu (Air), Agni (Fire), Jala (Water) and Prithvi (Earth)**. There is a balanced condensation of these elements in different proportions to suit the needs and requirements of different structures and functions of the body matrix and its parts.
- **The two famous practitioners of Ayurveda in ancient India were Charaka (1st-2nd centuries C.E.) and Sushruta (c. 4th century C.E.)**. Charak Samhita, written by Charak is a remarkable book on medicine. In his treatise, Susruta Samhita, Sushruta speaks about elaborate surgical procedures.

Q 83.C

- In the wake of the transfer of power from the British East India Company to the British Crown, **a section of European forces employed under the Company resented the move that required the three Presidency Armies to transfer their allegiance from the defunct Company to the Queen, as in the British Army**. **This resentment resulted in some unrest termed as White Mutiny**.
- Prior to 1861, there were two separate military forces in India, operating under the British rule. One was the Queen's army and the other comprised the units of the East India Company. The Company's troops received batta, extra allowances of pay to cover various expenditures related to operations in areas other than the home territories. With the transfer of power, the batta was stopped. Lord Canning's legalistic interpretation of the laws surrounding the transfer also infuriated the affected White soldiers.

Q 84.C

- In the **Kesavananda Bharati case**, the Supreme Court laid down a new doctrine of the 'basic structure' (or 'basic features') of the Constitution. It ruled that the constituent power of Parliament under **Article 368** does not enable it to alter the '**basic structure' of the Constitution**. From the various judgements, features like Independent Judiciary, Secularism, Rule of law, Free and fair elections, Parliamentary system etc. emerged as the part of Basic Structure. **Hence option 1 is correct.**
- The form of government in which the executive is selected from among the members of the legislature and is responsible to the legislature is called Parliamentary government. A Parliamentary government is also known as the **cabinet form of government** because the cabinet is the real executive in it. It is also

called responsible government, since the cabinet always **remains responsible to the legislature for its activities. Hence option 2 is correct.**

- The term **"separation of powers" was coined by Montesquieu, an 18th century French social and political philosopher in his publication, 'The Spirit of the Laws'. It forms the basis of the American constitutional structure.** Article I of American Constitution vests the legislative power in the Congress; Article II of American Constitution vests executive power in the President and Article III of American Constitution vests judicial power in the Supreme Court. The framers of the American constitution believed that the principle of separation of powers would help to prevent the rise of tyrannical government by making it impossible for a single group of persons to exercise too much power. **Separation of powers is also a feature of Indian constitution. However, it is much more flexible as compared to American Constitution which is water-tight in character.** Some of the common manifestations of Separation of Powers in India include Powers, Privileges and Immunities to the MPs, Immunity from Judicial scrutiny into the proceedings of the house etc. On the other hand, there are some exceptions to this rule - for e.g. the executive is a part of the legislature; Power of the executive to formulate delegated legislation; Power of President to issue Ordinance etc. **Hence option 3 is not correct.**

Q 85.A

- The Peninsular region of India does not have any well-defined cold-weather season. There is hardly any seasonal change in the distribution pattern of the temperature in coastal areas due to the following reasons:
  - moderating influence of the sea because the ocean absorbs heat when the air is warm and releases heat when the air is cool. **Hence option 1 is correct.**
  - the part lying south of the Tropic of Cancer falls in the tropical zone. The tropical zone being nearer to the equator experiences high temperatures throughout the year with a small daily and annual range. **Hence option 2 is correct.**
- For example, the mean maximum temperature for January at Thiruvananthapuram is as high as 31°C, and for June, it is 29.5°C. Temperatures at the hills of Western Ghats remain comparatively low.
- The absence or presence of the perennial river does not have any significant impact on the temperatures experienced by the region. **Hence option 3 is not correct.**

Q 86.C

- Ecological connectivity is the unimpeded movement of species and the flow of natural processes that sustain life on Earth. **Hence, statement 1 is correct.**
- Connectivity includes both structural connectivity (the physical arrangements of disturbance and/or patches) and functional connectivity (the movement of individuals across contours of disturbance and/or among patches).
- The loss and fragmentation of habitat are the key threats to migratory animals across the world. They are also considered to be the greatest threats to biodiversity worldwide with climate change exacerbating these effects.
- Loss of connectivity has impacted the ecological integrity of the entire global ecological network. It has affected ecological mechanisms such as nutrient and energy flows, predator-prey relationships, pollination, seed dispersal, demographic rescue etc.
- Restoring ecological connections will enhance resilience to environmental changes such as climate change and support nature and people. **Hence, statement 2 is correct.**
- Recently concluded Convention on Migratory Species (CMS) COP13 has highlighted the importance of ecological connectivity to better protect migratory wildlife and their habitats. It has called for the concept of connectivity to be integrated into the new Global Biodiversity Framework, which will be adopted at the end of next year in China.

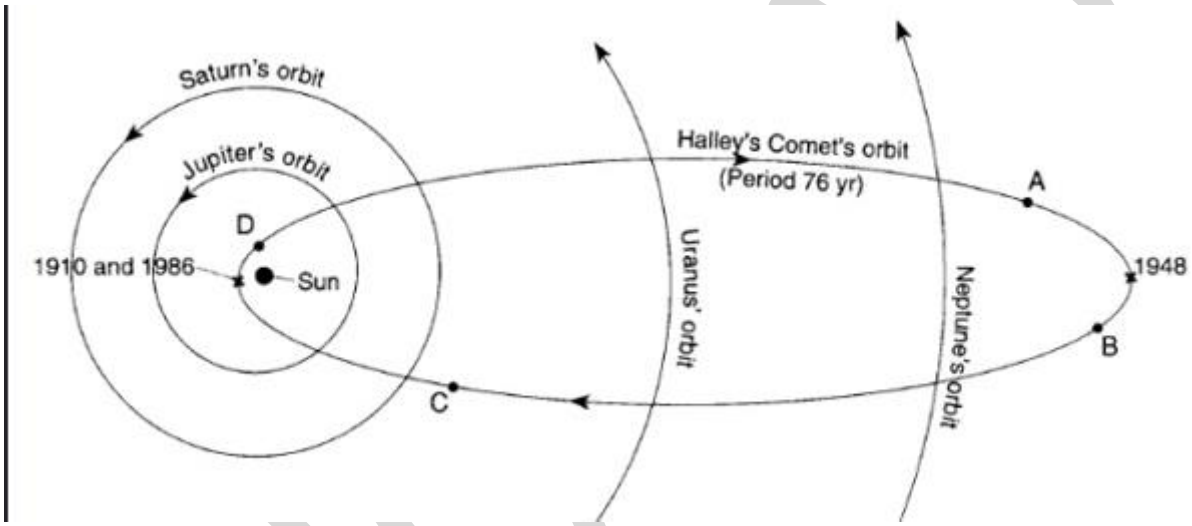
Q 87.C

- The founder of the independent principality of **Awadh** was **Saadat Khan**, popularly known as Burhan-ul-Mulk. Saadat Khan was a Shia. He had joined in a conspiracy against the Sayyid brothers, which resulted in his being given an increased mansab. Later, driven out of the court, he was prompted to found a new independent state. Saadat Khan committed suicide due to pressure from Nadir Shah who was demanding a huge booty from him. He was succeeded by Safdar Jang as the Nawab of Awadh.
- **Murshid Kuli Khan** was the founder of the independent state of **Bengal**. He was a capable ruler and made Bengal a prosperous state. He was succeeded in 1727 by his son Shujaud- din. His successor, Sarfaraz Khan, was killed in 1740 by Alivardi Khan, the deputy governor of Bihar at Gheria, who assumed power and made himself independent of the Mughal emperor by giving yearly tribute.

- **Martanda Varma** established an independent state of **Kerala** with Travancore as his capital after defeating Dutch. He extended the boundaries of his state from Kanyakumari to Cochin. He made efforts to organise his army along the Western model and adopted various measures to develop his state.

Q 88.C

- **Comets are cosmic snowballs of frozen gases, rock and dust that orbit the Sun.** When frozen, they are the size of a small town. When a comet's orbit brings it close to the Sun, it heats up and spews dust and gases into a giant glowing head larger than most planets. They can be visible in the night sky with naked eyes. **Hence option (a) is correct.**
- **A comet's tail is its most defining characteristic. It can be long enough to span the distance between the Earth and the sun, and it always points away from the sun, no matter which direction the comet is travelling**. That's because it's created by the solar wind, which is blowing gas away from the vapor cloud that surrounds the nucleus. **Hence option (d) is correct.**
- **All comets do not always orbit the sun in the same direction as planet Earth.** For e.g. Halley's comet revolves around the sun clock-wise, while the earth revolves around the sun counter-clockwise. **Hence statement (c) is not correct.**
- **Their orbits intersect with the orbit of the other planets. Hence statement (b) is correct.**



Q 89.A

- **In Recombinant DNA technology**, DNA molecules are formed by laboratory methods of genetic recombination (such as molecular cloning) to bring together genetic material from multiple sources, creating sequences that would not otherwise be found in the genome. It involves the following basic steps.
  - Identification of DNA with desirable genes
  - **Introduction of the identified DNA into the host**
  - Maintenance of introduced DNA in the host and transfer of the DNA to its progeny.
- **Biolistics is a method for the delivery of nucleic acid (DNA/RNA molecules) to host cells by high-speed particle bombardment.** By coating particles of a heavy metal (**gold or tungsten**) with a gene of interest and firing these micro-projectiles into cells using mechanical force, an integration of desired genetic information can be induced into cells. Gene gun or biolistic particle delivery systems are mostly used with plant cells. However, there is much potential use in humans and other animals as well. **Hence option (a) is the correct answer.**
- In a method known as **micro-injection**, recombinant DNA is directly **injected into the nucleus of an animal cell.** Another method uses '**disarmed pathogen' vectors,** which when allowed to infect the cell, transfer the recombinant DNA into the host.

Q 90.C

- A lake is a body of water of considerable size, localized in a basin, that is surrounded by land apart from a river or other outlet that serves to feed or drain the lake.
- Lake can be classified based on the nature of formation as follows:
- **Crater and caldera lakes**
  - During a volcanic explosion the top of the cone may be blown off leaving behind a natural hollow called a crater.

- This may be enlarged by subsidence into a caldera. In dormant or extinct volcanoes, rain falls straight into the crater or caldera which has no superficial outlet and forms a crater or caldera lake.
- Examples: **Lonar** in Maharashtra and Krakatao in Indonesia.

- Tectonic lakes
  - Due to the warping (simple deformation), subsidence (sliding downwards), bending and fracturing (splitting) of the earth's crust, tectonic depressions occur. Such depressions give rise to lakes of immense sizes and depths. They include Lake Titicaca, and the Caspian Sea.
- **Endorheic Lakes**
  - Some lakes do not have a natural outflow and lose water solely by evaporation or underground seepage or both. They are termed endorheic lakes. For example **Sambhar Lake.**
- **Backwaters Lakes**
  - They are brackish lagoons and lakes lying parallel to the Sea coast.
  - The backwaters have a unique ecosystem where freshwater from the rivers meets the seawater from the Sea
  - Ashtamudi Lake & **Vembanad Lake** are some of the examples of backwater lakes.
- **Oxbow lake**
  - It is a U-shaped lake that forms when a wide meander of a river is cut off, creating a free-standing body of water.
  - Wular Lake and **Loktak Lake** in Manipur are some of the examples.
- **Cirque lakes or tarns**
  - Cirque is a hollow basin cut into a mountain ridge. It has steep-sided slope on three sides, an open end on one side, and a flat bottom. When the ice melts, the cirque may develop into a tarn lake.

Q 91.B

- **The desert locust (Schistocerca gregaria)** is a **short-horned grasshopper** that is innocuous while it is in a "solitary phase" and moving about independently. These winged insects differ from normal hoppers, and become dangerous only when their populations build up rapidly and the close physical contact in crowded conditions triggers behavioral changes. **Hence option (b) is the correct answer.**
- They, then, enter the **"gregarious phase"**, by grouping into bands and forming swarms that can travel great distances (up to 150 km daily), while eating up every bit of vegetation on the way. If not controlled at the right time, these insect swarms can threaten the food security of countries. Kenya is already reporting its worst locust outbreak in 70 years, while Ethiopia and Somalia haven't seen one this bad in quarter of a century.
- Large and aggressive swarms of these crop-devouring short-horned insects have invaded large areas of **Western and North India**.
- In addition to the above mentioned **desert locust**, there are three other types of locusts found in India. They are
  - **Migratory locusts**
  - **Bombay locusts**
  - **Tree locusts**
- Of all the four, **desert locust** is the most **destructive** to the vegetation.

Q 92.D

- **Navigation with Indian Constellation (NavIC)** is the Indian Regional Navigation Satellite System (**IRNSS**) developed by Indian Space Research Organization (ISRO). It is an independent regional navigation system designed to provide accurate position information service to users in India as well as the **region extending up to 1,500 km from its boundary**, which is its primary service area. IRNSS is envisaged to provide two types of services, namely **Standard Positioning Service (SPS) and Restricted Service (RS)** and provides a position accuracy of better than 20 m in the primary service area. The IRNSS system consists of **Ground Segment, Space Segment and User Segment.**
- Applications:
  - With the satellite constellation established, NavIC system is now fully available for position, navigation and timing solution. NavIC signal can be extensively used in a variety of **civil and commercial activities related to land transportation, aviation, maritime mapping,** surveying and geodesy, scientific research, timing and telecommunications, etc.
  - **NavIC vehicle tracking:** Navigation with Indian Constellation (NavIC) based vehicle tracking system developed by India has been mandated to be equipped in all commercial vehicles.

- **NavIC in Launch vehicles:** NavIC based trajectory tracking has already become the standard practice for all PSLV and GSLV Mk III missions.
- **NavIC Messaging Service:** Using the NavIC messaging service along with support from **Indian National Centre for Ocean Information Services (INCOIS)**, NavIC messaging receivers (NMR) were developed which transmit alerts messages such as cyclone, high wave, etc., and provide information on Potential Fishing Zone for the fishermen venturing into deep sea.
- Pilot project for **Satellite based Ground water level monitoring** system at various remote locations across India was carried out. ISRO has developed a Proof of Concept where **NavIC is used for time stamping of ground water level measurements** at each location.

Q 93.A

- **The Global Learning and Observations to Benefit the Environment (GLOBE) Program** is an international science and education program that provides students and the public worldwide with the opportunity to participate in data collection and the scientific process, and contribute meaningfully to our understanding of the Earth system and global environment. **The National Aeronautics and Space Administration (NASA) and the United Nations Environmental Programme agreed to work together on the promotion and implementation of Global Learning and Observations to Benefit the Environment (GLOBE) and UN Environment's activities.** Hence it was announced by the U.S. Government on Earth Day in 1994, GLOBE launched its worldwide implementation in 1995. It will celebrate 25 years of existence in 2020.
- **Vision**: A worldwide community of students, teachers, scientists, and citizens working together to better understand, sustain, and improve Earth's environment at local, regional, and global scales.
- **Mission**: To promote the teaching and learning of science, enhance environmental literacy and stewardship, and promote scientific discovery.

Q 94.B

- The revolt of the Moamarias in 1769 was a potent **challenge to the authority of Ahom kings of Assam**.
- The Moamarias were **low-caste peasants who followed the teachings of Aniruddhadeva (1553-1624)**, and their rise was similar to that of other low-caste groups in north India. (Aniruddhadeva is one of the prominent Vaishnava preceptors of Assam of the post-Sankardeva period)
- Their revolts weakened the Ahoms and opened the doors for others to attack the region, for instance, in 1792, the King of Darrang (Krishnanarayan), assisted by his band of burkandazes (the demobilised soldiers of the Muslim armies and zamindars) revolted.
- To crush these revolts, the Ahom ruler had to request for British help. The Moamarias made Bhatiapar their headquarters. Rangpur (now in Bangladesh) and Jorhat were the most affected region.
- Although the Ahom kingdom survived the rebellion, the weakened kingdom fell to a Burmese invasion and finally came under British rule.
- **Hence option (b) is the correct answer.**

Q 95.B

- **Tributaries of River Indus:** The Indus receives a number of Himalayan tributaries such as Shyok, the Gilgit, the Zaskar, the Hunza, the Nubra, the Shigar, the Gasting and the Dras. The other important tributaries of joining the right bank of the Indus are Khurram, the Tochi, the Gomal, the Voboa, and the Sangar.
- **Nubra River:** It is a river in the Nubra Valley of Ladakh in India. It is a tributary of the Shyok River (a part of the Indus River system) and originates from the Siachen Glacier, the second-longest glacier in the world.
- **Kabul River:** The Kabul River, the classical Cophes, is a 700-kilometre (430 mi) long river that starts in the Sanglakh Range of the Hindu Kush mountains in Afghanistan and ends in the Indus River near Attock, Pakistan.
- **Kurram River:** It originates from watershed of Koh e sofaid in Kurram District, flows through North Waziristan District, Khyber Pakhtunkhwa, Pakistan and joins River Indus near Isa Khel.
- **Beas River:** It is another tributary of indus, originating from Beas Kund near rohtang pass at an elevation of 4000 m above the mean sea level.
- **Satluj River:** It originates in the Raksas tal near Mansarovar at an altitude of 4,555m in Tibet where is known as Langchen Khambab

Q 96.B

- **Article 16** provides for equality of opportunity for all citizens in matters of employment or appointment to any office under the State. No citizen can be discriminated against or be ineligible for any employment or office under the State on grounds of only religion, race, caste, sex, descent, place of birth or residence. **Article 16(4)** provides that the state can **make reservations in matters of appointment and promotion in favour of the SCs and STs** if they are not adequately represented in the services of the state.
- Recently, the Supreme Court has ruled that **reservation in promotion is not a fundamental right** and the states cannot be compelled to make laws in this regard for Scheduled Castes (SC) and Scheduled Tribes (ST). The order further adds that the state is not bound to make a reservation for SCs and STs in matters of promotions. **Hence statement 1 is not correct.**
- However, if the state wishes to exercise its discretion and make such provision, it **has to collect quantifiable data showing 'inadequacy of representation of that class in public services,' the judgement reads. Hence statement 2 is correct.**
- **Hence option (b) is the correct answer.**

Q 97.A

- **The World Bank and the Government of India recently signed the $750 million agreement for the MSME Emergency Response Programme to support increased flow of finance into the hands of micro, small, and medium enterprises (MSMEs), severely impacted by the COVID-19 crisis. Hence option (a) is the correct answer.**
- The World Bank's MSME Emergency Response Programme will address the immediate liquidity and credit needs of some 1.5 million viable MSMEs to help them withstand the impact of the current shock and protect millions of jobs.
- This project will support the Government in providing targeted guarantees to incentivize NBFCs and banks to continue lending to viable MSMEs to help sustain them through the crisis. The World Bank Group, including its private sector arm – the International Finance Corporation (IFC), will support the government's initiatives to protect the MSME sector by:

Q 98.B

- **Statement 1 is correct: Winter diesel is a specialised fuel that was introduced by IOCL last year specifically for high altitude regions and low-temperature regions such as Ladakh**, where ordinary diesel can become unusable.
- **Statement 2 is not correct**: winter diesel which contains additives to maintain lower viscosity can be used in temperatures as low as -30°C and that besides a low pour point, it had higher cetane rating — an indicator is the combustion speed of diesel and compression needed for ignition— and lower sulphur content, which would lead to lower deposits in engines and better performance.
- **Statement 3 is correct**: **State-owned Indian Oil Corporation (IOC)**, which is the largest oil marketing company in the country, has sought approval from the Directorate General of Quality Assurance (DGQA) of the armed forces to approve winter diesel that is said to be usable at temperatures as low as -30° celsius. **Hence option (b) is the correct answer.**

Q 99.D

- Samrat Hem Chandra Vikramaditya or Hemu was a Hindu emperor in Delhi by virtue of defeating Akbar/Humanyun's army in Battle for Delhi. Hemu belonged to Rewari in present-day Haryana, who earlier was an adviser to Sher Shah Suri's son Islam Shah from 1545 to 1553. Hemu had won 22 battles, as Prime Minister and Chief of Army of Islam Shah, from 1553 to 1556 to quell the rebellion by Afghan rebels against the Sur regime. **Hence statement 1 is correct.**
- At the time of Humayun's death in January 1556, Hemu had just quelled a rebellion in Bengal, killing the Bengal ruler Muhammad Shah in the war. He made his intentions of winning Delhi for himself known to his commanders. He then started a campaign, winning battles throughout northern India. When he attacked Agra, the commander of Akbar's forces in Agra, fled without fighting.
- Hemu marched towards Delhi and stationed his forces outside the city at Tughlaqabad. On October 6, 1556, the army encountered Mughal resistance. After a fierce fight Akbar's forces were ousted, and Tardi Beg, the commander of the Mughal forces, escaped, allowing Hemu to capture Delhi. Around 3,000 Mughals were killed. Hemu was crowned at Purana Qila on October 7, 1556, and established Hindu rule

in North India, after 350 years of Muslim rule, and was bestowed the title of Samrat Hem Chandra Vikramaditya. **Hence statement 2 is correct.**

- According to Abul Fazl in Akbarnama, Hemu was preparing for an attack on Kabul and made several changes in his army.
- Developments in Delhi and Agra disturbed the Mughals at Kalanaur, Punjab. Many Mughal Generals advised Akbar to retreat to Kabul as Mughal forces may not face Hemu's might, but Bairam Khan decided in favor of war.
- Akbar's army marched towards Delhi. On November 5, both armies met at the historic **second battle of Panipat**, where, thirty years earlier, Akbar's grandfather Babur had defeated Ibrahim Lodi in what is now known as the First Battle of Panipat.
- Hemu was himself commanding his forces from atop an elephant. It seemed Hemu was on a winning track and Akbar's army would rout. **Suddenly in the midst of the contest, an arrow reached Hemu's eye, and piercing the socket, came out at the back of his head, and he became unconscious**. Not seeing Hemu, Hemu's army was in disarray and defeated in the ensuing confusion. **Several hours after the war ended, dead Hemu was located and captured**.
- On January 24, 1556, the Mughal ruler Humanyun died in Delhi and was succeeded by his son, Akbar Kalanaur, who was only thirteen years old. On February 14, 1556, Akbar was enthroned as the king. At the time of his accession to the throne, the Mughal rule was confined to Kabul, Kandahar, parts of Delhi and Punjab. Akbar was then campaigning in Kabul with his guardian, Bairam Khan. **Hence statement 3 is correct.**

Q 100.B

- A **Pigovian/Pigouvian tax** is a tax on activities that create socially harmful externalities. An externality is an activity that creates a negative effect on others in a society but not necessarily the person who does that activity.
- Pigovian taxes were named after English economist Arthur C. Pigou, a significant contributor to early externality theory. The Pigovian tax is meant to discourage activities that impose a net cost of production onto third parties and society as a whole.
- According to Pigou, negative externalities prevent a market economy from reaching equilibrium when producers do not internalize all costs of production. This adverse effect might be corrected, he contended, by levying taxes equal to the externalized costs.
- A popular example of a Pigovian-style tax is a tax on pollution. Pollution from a factory creates a negative externality because nearby or impacted third parties bear part of the cost of pollution
- Pigouvian taxes discourage behaviors that create negative externalities. In situations where it doesn't, it raises revenues to help those affected by the externality. For example, the gasoline tax reduces driving while funding highway maintenance.
- Pigouvian taxes can also create more efficiency in an economy, especially when the tax covers the cost of the external damage. It creates the true cost of producing the good or service. The business then decides whether it is worth the extra cost.
- Indian examples of Pigovian tax include Carbon tax (Clean environment cess) levied at a rate of Rs 400/tonne on coal, SC mandated "Environment Compensation Charge" on commercial vehicles entering Delhi etc.
- **A Tobin tax** is a tax on all spot conversions of one currency into another. It was suggested by James Tobin. It was originally intended to penalize short-term financial round-trip excursions into another currency.
- **Wealth tax** is a tax levied on the value of held assets. It is applicable on a variety of asset like cash, bank deposits, shares, fixed assets, personal cars, assessed value of real property, pension plans etc.
- **Capital gains tax** is a levy assessed on the positive difference between the sale price of the asset and its original purchase price.