

Prelims Refresher Programme: Day 47 (Test-15)

QUESTION 1:

Consider the following statements:

1. The total number of Ministers in State should be less than 10% of the total number of members of the Legislative Assembly of State.
2. The provision was introduced through the first amendment of the Constitution in 1951.

Which of the statements given above is/are correct ?

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

Answer: (d)

Explanation

- According to **Article 164 (1A) of the Constitution**, the total number of Ministers, including the Chief Minister, in the Council of Ministers in a State shall not exceed 15% of the total number of members of the Legislative Assembly of that State.
 - Provided that the number of Ministers, including the Chief Minister in a State shall not be less than twelve. **Hence, statement 1 is not correct.**
- This provision was introduced through the **91st Constitution (Amendment) Act, 2003.**
- The First Constitutional Amendment Act, 1951 was introduced to amend Article 19 and to insert provisions fully securing the constitutional validity of zamindari abolition laws in general and certain specified State Acts in particular. **Hence, statement 2 is not correct.**

QUESTION 2:

Consider the following statements regarding Purchasing Managers' Index (PMI):

1. PMI is an index that shows the growth rates in different industry groups of the economy in a fixed period of time.
2. The Index is compiled by the Central Statistics Office (CSO) in India.

Which of the statements given above is/are correct ?

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

Answer: (d)

Explanation

- **Purchasing Managers' Index (PMI)** is an **index of the prevailing direction of economic trends in the manufacturing and service sectors.**
 - It consists of a diffusion index that summarizes whether market conditions, as viewed by purchasing managers, are expanding, staying the same, or contracting.
 - The purpose of the PMI is to provide information about current and future business conditions to company decision makers, analysts, and investors.
 - **Index of Industrial production (IIP)** is an index that shows the growth rates in different industry groups of the economy in a fixed period of time. **Hence, statement 1 is not correct.**

- **The Purchasing Managers' Index is compiled by IHS Markit** for more than 40 economies worldwide including **India**.
 - IHS Markit is a global leader in information, analytics and solutions for the major industries and markets that drive economies worldwide. **Hence, statement 2 is not correct.**

QUESTION 3:

Which of the following protected areas are located in Assam?

1. Orang National Park
2. Laokhowa Wildlife Sanctuary
3. Buxa National park
4. Manas Wildlife Sanctuary

Select the correct answer using the code given below:

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

Answer: (a)

Explanation



- Orang National Park, Laokhowa Wildlife Sanctuary and Manas Wildlife Sanctuary are located in Assam whereas Buxa National park is located in West Bengal. **Hence, option A is correct.**

QUESTION 4:

With reference to Nagarhole National Park , consider the following statements:

1. It was declared as the first Tiger Reserve under Project Tiger.
2. It lies in the Eastern Ghats and is a part of the Nilgiri Biosphere Reserve.
3. The vegetation consists mainly of dry deciduous forests.

Which of the following statements is/are NOT correct?

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

Answer: (d)

Explanation

- Nagarhole National Park is also known as Rajiv Gandhi National Park, located in the state of Karnataka.
 - It was established as a wildlife sanctuary in 1955 and was upgraded into a national park in 1988. It was declared as the 37th Tiger reserve under Project Tiger in 1999. **Hence, statement 1 is NOT correct.**
- It lies in the Western Ghats and is a part of the Nilgiri Biosphere Reserve. **Hence, statement 2 is NOT correct.**
- The vegetation consists mainly of moist deciduous forests with predominating trees of teak and rosewood. **Hence, statement 3 is NOT correct.**

QUESTION 5:

With reference to Swachh Survekshan, consider the following statements:

1. It is a bi-annual survey of cleanliness, hygiene and sanitation.
2. Swachh Survekshan-Rural is conducted by the Ministry of Jal Shakti.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

- Swachh Survekshan is a part of the Swachh Bharat Mission, it is an **annual survey (not bi-annual survey)** of cleanliness, hygiene and sanitation in cities and towns across India. **Hence, statement 1 is not correct.**
- The ranking exercise is taken up by the Government of India to assess rural and urban areas for their levels of cleanliness and active implementation of Swachhata mission initiatives in a timely and innovative manner.
 - Swachh Survekshan-Urban is conducted by the Ministry of Housing and Urban Affairs.
 - **Swachh Survekshan-Rural is conducted by the Ministry of Jal Shakti. Hence, statement 2 is correct.**

QUESTION 6:

With reference to Lunar Reconnaissance Orbiter, consider the following statements:

1. It is also called Chandrayaan-1.
2. It maps the lunar poles and lunar subsurface.
3. It measures the dielectric constant of the lunar surface for finding the concentration of metal minerals.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation

- Lunar Reconnaissance Orbiter (LRO) is a NASA moon mission that has been in operation since 2009. **Hence, statement 1 is NOT correct.**
- The mission particularly focuses on the moon's poles to search for water or ice that could exist in permanently shadowed craters. Apart from this, it measures the concentration of metal minerals on the lunar surface and subsurface. **Hence, statement 2 is correct.**
- The LRO's Mini-RF instrument measures dielectric constant within lunar soil.
 - Dielectric constant, an electrical property, is the ratio of the electric permeability of a material to the electric permeability of a vacuum. **Hence, statement 3 is correct.**

QUESTION 7:

Consider the following statements with reference to 'Compulsory Licensing':

1. Compulsory Licensing in India is regulated under the Indian Patent Act, 1970.
2. It is not permitted under the Trade Related Aspects of Intellectual Property Rights (TRIPS Agreement).

Which of the statements given above is/are correct ?

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

Answer: (a)

Explanation

- **Compulsory Licensing (CL)** allows governments to license third parties (that is, parties other than the patent holders) to produce and market a patented product or process without the consent of patent owners.
- Compulsory Licensing is regulated under the **Indian Patent Act, 1970**. **Hence, statement 1 is correct.**
- **Compulsory Licensing is permitted under the WTO's Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement** provided some conditions are fulfilled. **Hence, statement 2 is not correct.**
 - However, the agreement **does not specifically** list the reasons that might be used to justify compulsory licensing. But the **Doha Declaration** on TRIPS and Public Health confirms that **countries are free to determine the grounds** for granting compulsory licences, and to determine what constitutes a **national emergency**.

QUESTION 8:

Consider the following statements:

1. It is the discretion of the Prime Minister to furnish any information to the President under Article 78 of the Constitution.
2. The President is obliged to act on the advice of the council of ministers in the exercise of his functions.

Which of the statements given above is/are correct ?

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

Answer: (b)

Explanation

- As per Article 78, following are the **duties of the Prime Minister**:
 - To **communicate to the President** all decisions of the Council of Ministers relating to the administration of the affairs of the union and proposals for legislation;
 - To furnish such information relating to the administration of the affairs of the Union and proposals for legislation as the **President may call for**; and
 - If the **President so requires**, to submit for the consideration of the CoM, any matter on which a decision has been taken by a Minister but which has not been considered by the CoM. **Hence, statement 1 is not correct.**
- **Article 74** provides for the Council of Ministers to aid and advise President
 - There shall be a Council of Ministers with the Prime Minister at the head to aid and advise the President who shall, in the exercise of his functions, act in accordance with such advice: Provided that the President may require the council of Ministers to reconsider such advice, either generally or otherwise, and the President shall act in accordance with the advice tendered after such reconsideration.
 - The question whether any, and if so what, advice was tendered by Ministers to the President shall not be inquired into in any court
- After the **42nd and 44th constitutional amendment acts**, the President is **obliged to act on the advice of the council of ministers** in the exercise of his functions. But in some cases he can act on his own discretion. **Hence, statement 2 is correct.**
 - His **right to ask the Prime Minister to furnish any information** pertaining to the affairs of the union government under Article 78 of the Constitution is also one of such areas where he can act on his own discretion.

QUESTION 9:

With reference to winter diesel recently developed by the Indian Oil Corporation (IOC), consider the following statements:

1. It meets the Bureau of Indian Standards (BIS) standards of BS-VI grade.
2. Lower viscosity enables it to remain fluid in freezing conditions.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation

- Recently, the Indian Oil Corporation (IOC) has sought approval from the Directorate General of Quality Assurance (DGQA) for the use of winter diesel by armed forces for operations in high altitude areas such as Ladakh.
- The winter diesel was introduced as a technological solution by the IOC in 2019 in high-altitude sectors like Ladakh, Kargil, Kaza and Keylong, which face the problem of freezing of diesel in their vehicles in extreme weather conditions.
- Winter Diesel is a specialised fuel specifically for high altitude regions and low-temperature regions such as Ladakh, where ordinary diesel can become unusable.
- Winter Diesel also meets the **Bureau of Indian Standards (BIS) specification of BS-VI grade**. **Hence, statement 1 is correct.**

- Winter Diesel contains additives to **maintain lower viscosity** by enabling the fuel to remain fluid in freezing conditions. **Hence, statement 2 is correct.**

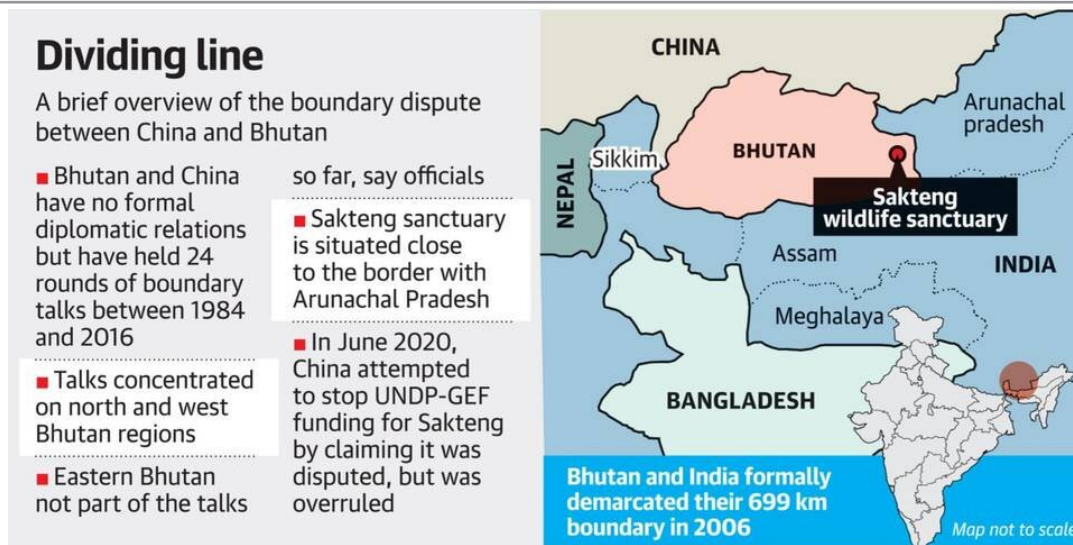
QUESTION 10:

Where is Sakteng Wildlife Sanctuary located?

- (a) Myanmar
- (b) India
- (c) Bhutan
- (d) Nepal

Answer: (c)

Explanation



- Recently, China made **territorial claims over Sakteng Wildlife Sanctuary** at an online meeting of the 58th Global Environment Facility (GEF) Council, while objecting to the funding request to develop the Sakteng Wildlife Sanctuary project which is located in eastern Bhutan. **Hence, option C is correct.**
 - Bhutan totally rejected the claim made by China. It said that Sakteng Wildlife Sanctuary is an integral and sovereign territory of Bhutan.

QUESTION 11:

Consider the following statements:

1. Plague is caused by the bacteria found in small mammals and their fleas.
2. Plague is only transmitted between animals and humans through direct contact.

Which of the statements given above is/are correct?

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

Answer: (a)

Explanation

- Plague is caused by the **bacteria Yersinia pestis** usually found in **small mammals and their fleas**. There are two main clinical forms of plague infection: **bubonic** and **pneumonic**.



- Bubonic plague is the most common form and is characterized by painful swollen lymph nodes or 'buboes'. **Hence, statement 1 is correct.**
- It is transmitted between animals and humans by the bite of infected fleas, direct contact with infected tissues and **inhalation of infected respiratory droplets**. **Hence, statement 2 is not correct.**
- Plague can be a very severe disease in people, with a case-fatality ratio of 30% to 60% for the bubonic type, and is always fatal for the pneumonic kind when left untreated.

QUESTION 12:

Consider the following statements regarding CAATSA:

1. It is a United Nations resolution that imposes sanctions on Iran, Syria and North Korea.
2. It also sanctions against the countries that engage in trade with China's defense and intelligence sectors.

Which of the statements given above is/are correct?

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

Answer: (d)

Explanation

- **Countering America's Adversaries Through Sanctions Act (CAATSA)** is a **United States federal law** that imposed sanctions on Iran, North Korea, and Russia. Hence, statement 1 is not correct.
- CAATSA includes sanctions against countries **that engage in significant transactions with Russia's defense and intelligence sectors**. **Hence, statement 2 is not correct.**
 - Thus, India could face USA sanctions for purchasing the **S-400 Triumf missile defense system** from Russia under the CAATSA.
- The S-400 is known as Russia's most advanced long-range surface-to-air missile defence system. China was the first foreign buyer to seal a government-to-government deal with Russia in 2014 for the system.

QUESTION 13:

With reference to Lithium, consider the following statements:

1. It is a light inflammable metal which is mainly used in batteries.
2. It is produced through Stellar nucleosynthesis.
3. It is used in treatment of mental health disorders.

Which of the statements given above is/are correct?

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

Answer: (d)

Explanation

- Lithium is a light inflammable metal which is mainly used in lithium-ion (Li-ion) batteries and has brought a transformation in modern communication devices and transportation. **Hence, statement 1 is correct.**

- The scientists from the Indian Institute of Astrophysics (IIA) have provided evidence that Lithium (Li) production is common among low mass Sun-like stars during their Helium (He) core burning phase (end of the star's core hydrogen-burning phase).
 - It is produced by the process of Stellar nucleosynthesis, which means creation of chemical elements by nuclear fusion reactions within stars. **Hence, statement 2 is correct.**
- It is also used in treatment of mental health disorders. For example, Lithium carbonate is a common treatment of bipolar disorder, helping to stabilize wild mood swings caused by the illness. **Hence, statement 3 is correct.**

QUESTION 14:

With reference to 'National Bureau of Plant Genetic Resources', consider the following statements:

1. It was started in response to the realization of perceived effects of the Green Revolution on agrobiodiversity.
2. It helps in crop improvement and diversification through germplasm introduction from various foreign countries.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation

- The 'National Bureau of Plant Introduction' was renamed as '**National Bureau of Plant Genetic Resources**' (NBPGR) in January 1977.
 - It is a nodal organisation in India for management of Plant Genetic Resources (PGR).
 - It is one of the **Indian Council of Agricultural Research (ICAR)** Institutes. ICAR is an autonomous organisation under the Ministry of Agriculture & Farmers' Welfare.
 - The establishment of the Bureau coincided with the advent of the Green Revolution and was **in response to the realization of perceived effects of the Green Revolution on agrobiodiversity. Hence, statement 1 is correct.**
 - It was in accordance with the international developments in the form of establishment of the International Board for Plant Genetic Resources (IBPGR), Rome, in 1974 (now renamed as International Plant Genetic Resources Institute).
- It has played a pivotal role in the **improvement of various crop plants and diversification and development of agriculture** in India through **germplasm introduction** from various institutes/organizations located in **foreign countries and germplasm collection from within the country** and abroad and conservation thereof. **Hence, statement 2 is correct.**

QUESTION 15:

With reference to Golden Birdwing, consider the following statements:

1. It is a species of migratory bird.
2. It is mostly found in Himalayan region.

Which of the statements given above is/are correct?

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

(d) Neither 1 nor 2

Answer: (b)

Explanation

- **Golden Birdwing** (*Troides aeacus*), a **Himalayan butterfly** known as has been recently discovered as India's largest butterfly after 88 years. **Hence, statement 1 is not correct.**
- The female was recorded from Didihat in Uttarakhand, the male was from the Wankhar Butterfly Museum in Shillong, Meghalaya. **Hence, statement 2 is correct.**

QUESTION 16:

With reference to 'Ranthambore National Park', consider the following statements:

1. This national park is located at the junction of the Aravali and Vindhya ranges.
2. The moist deciduous forest type is mainly found in this national park.

Which of the statements given above is/are correct ?

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

Answer: (a)

Explanation

- **Ranthambore Tiger Reserve** lies in the eastern part of Rajasthan in Karauli and Sawai Madhopur districts, at the **junction of the Aravali and Vindhya hill ranges**. **Hence, statement 1 is correct.**
- The vegetation includes grasslands on plateaus and dense forests along the seasonal streams. The forest type is mainly **tropical dry deciduous** with 'dhak' (*Butea monosperma*), a species of tree capable of withstanding long periods of drought, being the commonest. **Hence, statement 2 is not correct.**
 - This tree is also called as 'Flame of forest' and is one of the many flowering plants that add colour to the dry summers here.

QUESTION 17:

Consider the following statements:

1. Labour is a subject under the Concurrent List of the Seventh Schedule of the Constitution.
2. The minimum wages of labour include the basic needs based on the cost of living in a specific community.

Which of the statements given above is/are correct ?

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

Answer: (a)

Explanation

- The **Central Government is empowered to fix the floor wages** by taking into account the living standards of workers. It may set different floor wages for different geographical areas.
 - The minimum wages decided by the central or state governments must be higher than the floor

wage.

- Under the Constitution of India, **labour is a subject in the Concurrent List of the Seventh Schedule** where both the Central and State Governments are competent to enact legislation. **Hence, statement 1 is correct.**
- The different types of wages are:
 - **Minimum Wage:** The International Labour Organisation defines it as “the **minimum amount of remuneration** that an employer is required to pay wage earners for the work performed during a given period, which cannot be reduced by collective agreement or an individual contract”.
 - ◆ The minimum wage includes the **bare needs of life like food, shelter and clothing.**
 - **Living Wage:** It is the wage needed to provide the minimum income necessary to **pay for basic needs** based on the **cost of living in a specific community.**
 - ◆ In addition to bare needs, a ‘living wage’ includes education, health, insurance, etc. **Hence, statement 2 is not correct.**
 - **Fair Wage:** A ‘fair wage’ is a mean between ‘living wage’ and ‘minimum wage’.
 - **Starvation Wage:** It refers to the wages which are insufficient to provide the ordinary necessities of life.

QUESTION 18:

National Mission for Manuscripts is under the aegis of which of the following ministries?

- (a) Ministry of Human Resource and Development.
- (b) Ministry of Culture
- (c) Ministry of Minority Affairs
- (d) Ministry of Tribal Affairs

Answer: (b)

Explanation

- The National Mission for Manuscripts (NMM) was launched in 2003 by the Government of India with the mandate of documenting, conserving and disseminating the knowledge preserved in the manuscripts.
 - A manuscript is a handwritten composition on paper, bark, cloth, metal, palm leaf or any other material dating back at least seventy-five years that has significant scientific, historical or aesthetic value.
- One of the objectives of the mission is to publish rare and unpublished manuscripts so that the knowledge enshrined in them is spread to researchers, scholars and the general public at large.
- It is under the Ministry of Culture. **Hence, option (b) is correct.**

QUESTION 19:

Rabari, Bharvad and Charan communities belong to which of the following states ?

- (a) Jharkhand
- (b) Assam
- (c) Gujarat
- (d) Chhattisgarh

Answer: (c)

Explanation

- **Rabari, Bharvad and Charan are Schedule Tribes communities mainly belonging to Gujarat. Hence, option C is correct.**

- Recently, the Gujarat government decided to form a five-member commission to identify members of Rabari, Bharvad and Charan communities, who are eligible for benefits of Schedule Tribe (ST) status.
 - The identification process has been initiated because it is being alleged that a number of people not actually belonging to the community managed to get ST certificates and are enjoying undue reservation benefits, mainly in government jobs.

QUESTION 20:

With reference to Infant Mortality Rate (IMR), consider the following statements:

1. It is the number of deaths of children under one year of age per 1000 live births.
2. The Office of the Registrar General which provides the estimates of IMR is under the Ministry of Statistics and Program Implementation.
3. Infant Mortality Rate in India is higher in rural areas than in urban areas.

Select the correct answer using the code given below:

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

Answer: (a)

Explanation

- Infant Mortality Rate (IMR) is the number of deaths of children under one year of age per 1000 live births. **Hence, statement 1 is correct.**
- **The Office of the Registrar General is under the Ministry of Home Affairs.** It issues the Sample Registration System bulletin, which provides estimates of birth rate, death rate and infant mortality rate for states. **Hence, statement 2 is not correct.**
- The country's average IMR stands at 32 per 1,000 live births which includes an average **36 deaths for rural and 23 for urban areas.** **Hence, statement 3 is correct.**

QUESTION 21:

With reference to Tiger Census in India, consider the following statements:

1. The Tiger census is done every five years by the National Tiger Conservation Authority (NTCA).
2. India has fulfilled its resolution made in 2010 to double the Tiger numbers, before the target year of 2022.
3. India's 2018 Tiger Census is the world's largest camera trapping wildlife survey.

Which of the statements given above is/are correct ?

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

Answer: (b)

Explanation

- The **Tiger Census in India is done quadrennially (every four years)** by the **National Tiger Conservation Authority (NTCA)** with technical help from the Wildlife Institute of India. **Hence, statement 1 is not correct.**

- It is done with cooperation from the state Forest Departments and partners.
- **India has also fulfilled its resolution to double the Tiger numbers made at St. Petersburg Tiger Summit in 2010, before the target year of 2022.**
 - The tiger numbers in India have increased from around 1500 in 2010 to 2976 in 2020. **Hence, statement 2 is correct.**
- **India's 2018 Tiger Census** has made it to the **Guinness Book of World Records** for being the world's largest camera trapping wildlife survey. **Hence, statement 3 is correct.**

QUESTION 22:

The "Padmanabhaswamy Temple", sometimes seen in the news, belongs to which style of architecture?

- (a) Chola
- (b) Cheras
- (c) Pandyas
- (d) Hoysala

Answer: (b)

Explanation

- According to Historians, the **Padmanabhaswamy Temple** dates back to the 8th century but the present structure was built in the 18th century by the then **Travancore Maharaja Marthanda Varma**.
 - The temple was initially made of wood but later it was constructed with granite.
- The temple is built in the **unique Chera style of architecture**, and its main deity is Lord Vishnu who is found in the Anantha Shayana posture (reclined posture of eternal yoga) on Adishesha or king of all serpents. **Hence, option B is correct.**
 - It is known to be one of the 108 holy temples associated with Vaishnavism in India.
- Recently, the Supreme Court of India upheld the right of the Travancore royal family to manage the property of deity at Sree Padmanabhaswamy Temple in Thiruvananthapuram (Kerala).

QUESTION 23:

The 'Tangam language' which is marked 'critically endangered' by UNESCO is spoken in which state?

- (a) Kerala
- (b) Chattisgarh
- (c) Arunachal Pradesh
- (d) Mizoram

Answer: (c)

Explanation

- The Chief Minister of Arunachal Pradesh has released a book titled "Tangams: An Ethnolinguistic Study Of The Critically Endangered Group of Arunachal Pradesh".
 - The book has valuable data on endangered oral narratives like ritual songs, lamentation songs, lullabies and festival songs in Tangam language spoken by the Tangam community, which has reportedly 253 speakers left now.
- Tangam People is a little-known community within the larger **Adi tribe of Arunachal Pradesh**.
 - Tangam is an oral language that belongs to the Tani group, under the greater Tibeto-Burman language family.
 - It has been marked 'critically endangered' by the **UNESCO World Atlas of Endangered Languages (2009)**. **Hence, option C is correct.**

QUESTION 24:

With reference to Chabahar port, consider the following statements:

1. It lies at the confluence of the Persian Gulf with the Arabian Sea.
2. India seeks to connect with central Asia through this port.
3. It is part of China's string of pearls strategy.

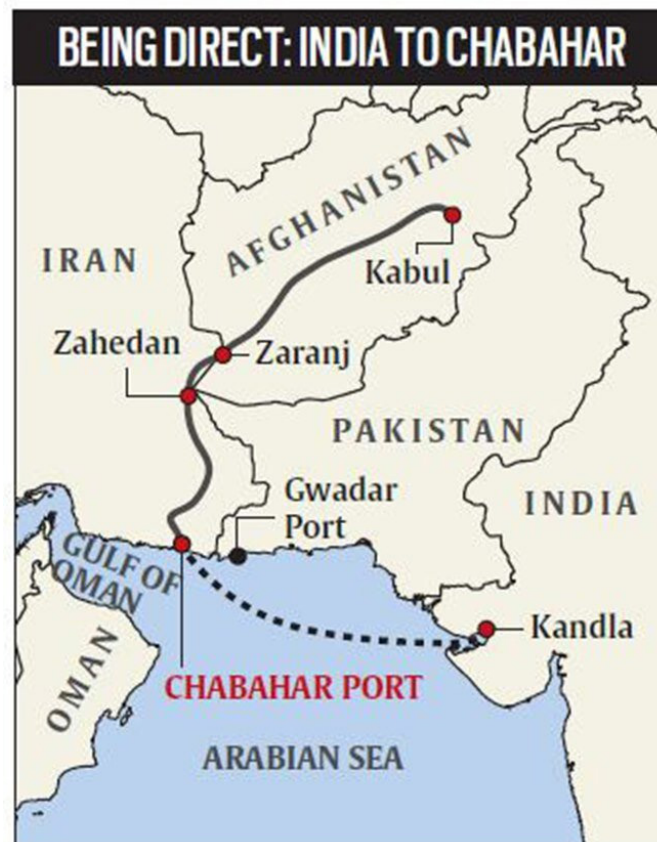
Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

- **Chabahar port** is the only oceanic port of Iran and is located on the Gulf of Oman. It lies at the confluence of **the Gulf of Oman with the Arabian Sea**. Hence, **statement 1 is NOT correct**.
- It is jointly developed by India, Iran, and Afghanistan. It opens up a permanent alternative route for trade with Afghanistan and Central Asia by bypassing the route through Pakistan.
 - It will boost India's regional connectivity and trade connectivity plan. Hence, **statement 2 is correct**.
- India has strategically invested in Chabahar port, as it is only 72 km away from the Gwadar port in Pakistan which has been developed by China under its strategy of the string of pearls (encircling India). Thus, through Chabahar port India seeks to counter China's strategy. Hence, **statement 3 is NOT correct**.



QUESTION 25:



With reference to Inflation, consider the following statements:

1. It is indicative of an increase in the purchasing power of a country's currency.
2. It measures the average price change in a basket of commodities and services over time.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

- Inflation refers to the rise in the prices of most goods and services of daily or common use, such as food, clothing, housing, recreation, transport, consumer staples, etc.
- Inflation measures the average price change in a basket of commodities and services over time. **Hence, statement 2 is correct.**
- Inflation **is indicative of the decrease in the purchasing power of a unit of a country's currency.** This could ultimately lead to a deceleration in economic growth. **Hence, statement 1 is not correct.**
- However, a moderate level of inflation is required in the economy to ensure that production is promoted.
- In India, the NSO under the Ministry of Statistics and Programme Implementation measures inflation. In India, inflation is primarily measured by two main indices — WPI (Wholesale Price Index) and CPI (Consumer Price Index) which measure wholesale and retail-level price changes, respectively.

QUESTION 26:

Which of the following countries share border with Persian Gulf:

1. Iran
2. Kuwait
3. Yeman
4. Oman
5. Qatar
6. Saudi Arabia

Select correct code from the following:

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

Answer: (c)

Explanation

- The lands around the Persian Gulf are shared by eight countries namely, **Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE).** **Yemen does not share a border with Persian gulf. Hence, option C is correct.**



QUESTION 27:

Consider the following statements regarding trade logistics:

1. Multimodal transportation is a combination of more than one mode of movement such as rail, road or sea, for end-to-end delivery of goods.
2. The Logistics Performance Index (LPI) developed by the World Economic Forum helps countries improve their trade logistics.

Which of the statements given above is/are correct ?

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

Answer: (a)

Explanation

- **Multimodal transportation** refers to a combination of more than one mode of movement, such as rail, road or sea, for end-to-end delivery of goods. **Hence, statement 1 is correct.**
 - It facilitates the exporters and gives them a sense of security in transporting their goods.
- The **Logistics Performance Index (LPI)**, developed by the World Bank Group (Not World Economic Forum), is an interactive benchmarking tool created to help countries identify the challenges and opportunities they face in their performance on trade logistics and what they can do to improve their performance. **Hence, statement 2 is not correct.**

QUESTION 28:

With reference to Zoonotic Diseases, consider the following statements:

1. Zoonotic diseases are caused by germs that spread between animals and people.
2. Avian, Swine and Camel flu are examples of Zoonotic diseases.

Which of the following statements is/are correct?

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

Answer: (c)

Explanation

- Zoonotic diseases (also known as zoonoses) are caused by germs that spread between animals and people.
 - These are caused by harmful germs like viruses, bacteria, parasites, and fungi.
 - These germs can cause many different types of illnesses in people and animals, ranging from mild to serious illness and even death. **Hence, statement 1 is correct.**
- Avian influenza (or Bird Flu), Swine Flu, Camel Flu (Middle East Respiratory Syndrome) and recent Covid-19 pandemic are examples of Zoonotic Diseases. **Hence, statement 2 is correct.**

QUESTION 29:

With reference to PPP models, consider the following statements:

1. In the case of Hybrid Annuity Model, the central government bears 60% of the project cost.
2. Under the Engineering, Procurement, and Construction model, the cost is completely borne by the government.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

- Recently, the **National Highways Authority of India (NHAI)** has decided to undertake performance assessment and ranking of the highways in the country.
- Apart from overall ranking of all the corridors, separate ranking for Build-Operate-Transfer (BOT), Hybrid Annuity Model (HAM) and Engineering, Procurement, and Construction (EPC) projects will also be done.
 - BOT is a conventional PPP model in which a private partner is responsible to design, build, operate (during the contracted period) and transfer back the facility to the public sector.
 - **In the case of HAM, the central government bears 40% of the project cost** and the remaining amount is arranged by the developer.
 - **Under the EPC model, the cost is completely borne by the government. Hence, statement 1 is not correct and statement 2 is correct.**

QUESTION 30:

With reference to World Bank Group institutions, consider the following statements:

1. International Development Association (IDA) provides low- or no-interest loans to low-income countries.
2. The Multilateral Guarantee Agency (MIGA) insures lenders and investors against political risks.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation

- The World Bank Group is a unique global partnership which consists of five development institutions.
 - The International Bank for Reconstruction and Development (IBRD) provides loans, credits, and grants.
 - **International Development Association (IDA) provides low- or no-interest loans to low-income countries. Hence, statement 1 is correct.**
 - The International Finance Corporation (IFC) provides investment, advice, and asset management to companies and governments.
 - **The Multilateral Guarantee Agency (MIGA) insures lenders and investors against political risk such as war. Hence, statement 2 is correct.**
 - The International Centre for the Settlement of Investment Disputes (ICSID) settles investment-disputes between investors and countries.

QUESTION 31:

With reference to 'Agriculture Infrastructure Fund', consider the following statements:

1. The fund strictly provides a short term debt financing facility for investment in post-harvest management Infrastructure projects..
2. The fund will be managed and monitored through an online Management Information System (MIS) platform.

Which of the statements given above is/are correct ?

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

Answer: (b)

Explanation

- The Union Cabinet gave its approval to a pan India **central sector scheme i.e. Agriculture Infrastructure Fund**, to inject formal credit into farm and farm-processing based activities.
 - It is a part of the over Rs. 20 lakh crore stimulus package announced in response to the Covid-19 crisis.
- The fund aims to provide **medium - long term debt financing facility** for investment in viable projects for post-harvest management Infrastructure and community farming assets. **Hence, statement 1 is not correct.**
- The Agriculture Infrastructure Fund will be managed and monitored through an **online Management Information System (MIS) platform. Hence, statement 2 is correct.**
 - It will enable all the qualified entities to apply for loan under this Fund.

QUESTION 32:

Consider the following statements:

1. Measles is a contagious bacterial disease.
2. Rubella is a mild viral infection that mostly affects children and young adults.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

- Measles is a highly **contagious viral disease** that causes death among many malnourished children globally.
 - It can cause serious complications, including blindness, encephalitis, severe diarrhoea, ear infection and pneumonia. **Hence, statement 1 is not correct.**
- Rubella is a contagious, generally mild viral infection that occurs most often in children and young adults.
 - Apart from it, Rubella also infects pregnant women and may cause death or congenital defects known as **Congenital Rubella Syndrome (CRS)** which causes irreversible birth defects. **Hence, statement 2 is correct.**

QUESTION 33:

With reference to 'Open Sky Agreement', consider the following statements:

1. It allows the airlines to operate an unlimited number of flights between the selected cities of two countries.
2. India doesn't have open sky agreements with any country.

Which of the statements given above is/are correct ?

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

Answer: (a)

Explanation

- **Open Sky Agreements** are **bilateral agreements** that the two countries negotiate to provide **rights for airlines to offer international passenger and cargo services**. It expands international passenger and cargo flights.
 - It allows unlimited number of flights to the selected cities of each other's countries. **Hence, statement 1 is correct.**
- The **National Civil Aviation Policy (2016)** allows the government to enter into an 'open sky' air services agreement on a reciprocal basis with **South Asian Association for Regional Cooperation (SAARC)** nations as well as countries beyond a 5,000 kilometre radius from New Delhi.
 - It implies that nations within 5,000 kilometer of distance need to enter into a bilateral agreement and mutually determine the number of flights that their airlines can operate between the two countries.
 - India has open sky agreements with Greece, Jamaica, Guyana, Finland, USA, Japan, etc. **Hence, statement 2 is not correct.**

QUESTION 34:

Which of the following is/ are correct regarding the State Election Commission?

1. It has been entrusted with the function of conducting elections for the State Legislative Assemblies.
2. The State Election Commissioner is appointed by the Governor.
3. Its tenure and appointment are directed as per the law made by the State Legislature.

Select the correct answer using the code given below:

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

Answer: (b)

Explanation

- The **State Election Commission** is a **constitutional body**. It has been entrusted with the function of **conducting free, fair and impartial elections to the local bodies** in the state. **Hence, statement 1 is not correct.**
 - **Article 324 (1)** vests in the Commission the powers of superintendence, direction and control of the elections to **both Houses of the State Legislature**.
- **Article 243K (1)** states that the superintendence, direction and control of the preparation of electoral rolls for, and the conduct of, all elections to the Panchayats (Municipalities under Article 243ZA) shall be vested in a **State Election Commission**. **It consists of a State Election Commissioner appointed by the Governor. Hence, statement 2 is correct.**
- Article 243K (2) states that the **tenure and appointment will be directed as per the law made by the state legislature**. The State Election Commissioner shall not be removed from his/her office except in like manner and on the like grounds as a Judge of a High Court. **Hence, statement 3 is correct.**

QUESTION 35:

With reference to UNCLOS Maritime Zones, consider the following statements:

1. The coastal States have sovereignty and jurisdiction over the territorial sea.
2. The contiguous zone extends seaward up to 24 nm from its baselines.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation

Territorial Sea

- **The coastal states have sovereignty and jurisdiction over the territorial sea. Hence, statement 1 is correct.**
- These rights extend not only on the surface but also to the seabed, subsoil, and even airspace.
- But the coastal states' rights are limited by the innocent passage through the territorial sea.

Contiguous Zone

- The contiguous zone extends seaward up to 24 nm from its baselines. Hence, statement 2 is correct.
- It is an intermediary zone between the territorial sea and the high seas.
- The coastal state has the right to both prevent and punish infringement of fiscal, immigration, sanitary, and customs laws within its territory and territorial sea.

Exclusive Economic Zone (EEZ)

- Each coastal State may claim an EEZ beyond and adjacent to its territorial sea that extends seaward up to 200 nm from its baselines.

QUESTION 36:

Consider the following statements regarding Kanger Valley National Park:

1. It is situated in Jharkhand.
2. Recently, a fungi named *Ophiocordyceps Nutans* has been spotted for the first time in this national park.

Which of the statements given above is/are correct ?

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

Answer: (b)

Explanation

- Kanger Valley National Park is situated in Bastar region of Chhattisgarh. Hence, statement 1 is not correct.
 - It derives its name from the Kanger River, which flows centrally from northwest to southeast direction. Kanger River is among one of the very few perennial rivers of Bastar.
 - Kanger Valley got the status of a national park in 1982.
- Recently, researchers have found ***Ophiocordyceps nutans* fungi for the first time in the kanger national park**, while setting out on a plant survey at the park.
 - This is the first occasion when these fungi have been found in the central region, earlier these have been reported in India only from the Western Ghats. Hence, statement 2 is correct.

QUESTION 37:

With reference to Sunderbans, consider the following statements:

1. It is a UNESCO'S World Heritage site.
2. Sunderban Wetland has been accorded the status of 'Wetland of International Importance'.
3. Sunderban Biosphere reserve is part of UNESCO's MAB programme.

Which of the statements given above is/are correct?

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

Answer: (d)

Explanation

- The Sundarbans is a mangrove area in the delta formed by the confluence of the Ganges, Brahmaputra and Meghna Rivers in the Bay of Bengal. It was declared as the UNESCO'S World Heritage site in

1987. Hence, statement 1 is correct.

- Sunderban Wetland has been accorded the status of 'Wetland of International Importance' under Ramsar Convention in 2019. Hence, statement 2 is correct.
 - The Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat is an international treaty for the conservation and sustainable use of wetlands.
 - It was signed in 1971.
- As part of the Man and Biosphere Programme (MAB), the Government of India adopted the National MAB programme and declared the entire Sundarban as the Sundarban Biosphere Reserve in 1989. Hence, statement 3 is correct.
 - The MAB Programme (accepted by UNESCO in 1970) develops the basis within the natural and social sciences for the rational and sustainable use and conservation of the resources of the biosphere.
 - It also envisages the improvement of the overall relationship between people and their environment.

QUESTION 38:

Consider the following statements:

1. Right to Education became a fundamental right in 2002 through the 86th Constitutional Amendment Act.
2. Right to Education Act, 2009 mandates 25% reservation in private schools for students from disadvantaged sections.

Which of the statements given above is/are correct ?

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

Answer: (c)

Explanation

- Originally Part IV of Indian Constitution, Article 45 and Article 39 (f) of DPSP, had a provision for state funding as well as equitable and accessible education.
 - **The 86th amendment to the Constitution of India in 2002**, provided **Right to Education as a Fundamental Right in part-III** of the Constitution.
 - The same amendment inserted **Article 21A** which made Right to Education a fundamental right for children between **6-14 years**. Hence, statement 1 is correct.
- The 86th amendment provided for a **follow-up legislation** for Right to Education Bill 2008 and finally **Right to Education Act (RTE) 2009**.
- **The RTE Act 2009** which states that at **least 25%** strength of a class in private schools should consist of **children belonging to weaker sections and disadvantaged groups**. Hence, statement 2 is correct.
- The disadvantaged sections of the society include:
 - SCs and STs
 - Socially Backward Classes
 - Differently abled

QUESTION 39:

The 'Swabhimani Anchal' is known as a cut-off region due to left-wing extremism is located in?

- (a) Odisha

- (b) Chhattisgarh
- (c) Andhra Pradesh
- (d) Jharkhand

Answer: (a)

Explanation

- Recently, a passenger bus service was started for the first time after India's Independence in **Swabhiman Anchal region** (formerly known as the cut-off area) in **Odisha's Malkangiri district**.
- Swabhiman Anchal is situated along the Odisha-Andhra Pradesh border, and had long been a stronghold of left-wing extremists.
 - The region is covered by water from three sides and another side by inhospitable terrain.
 - Balimela reservoir is also situated in the region.
 - **Hence, option A is correct.**

QUESTION 40:

With reference to National Skill Development Corporation, consider the following statements:

1. It is a not-for-profit public limited company.
2. It was set up by the Ministry of Finance..

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation

- **National Skill Development Corporation(NSDC) is a not-for-profit public limited company** incorporated in 2008 under **section 25 of the Companies Act, 1956** (corresponding to section 8 of the Companies Act, 2013). **Hence, statement 1 is correct.**
- It was set up by the **Ministry of Finance** as a **Public Private Partnership (PPP) model**. **Hence, statement 2 is correct.**
- The Government of India through the Ministry of Skill Development & Entrepreneurship (MSDE) holds 49% of the share capital of NSDC, while the private sector has the balance 51% of the share capital.
- It aims to promote skill development by catalyzing creation of large, quality and for-profit vocational institutions.

QUESTION 41:

Recently 'RCF SAFEROLA' was heard in the news. What is it related to?

- (a) A hand cleansing IsoPropyl Alcohol based gel.
- (b) A military tactic to keep Indian border safe from Chinese aggression.
- (c) A safe and effective testing kit for Covid-19.
- (d) A new edible oil variety extracted from the Sunflower.

Answer: (a)

Explanation



- 'RCF SAFEROLA' is a **hand cleansing IsoPropyl Alcohol (IPA) Based Gel** that assists the government in its effort to combat Covid -19.
- The hand cleansing gel is a skin friendly moisturizer based hand-sanitizer which contains IsoPropyl Alcohol (IPA) and Aloe Vera extract. It is enriched with Vitamin-E and has a fresh lime fragrance.
- 'RCF SAFEROLA' has been introduced by a 'mini ratna' company **Rashtriya Chemicals and Fertilizers Limited (RCF)**. Hence, option A is correct.

QUESTION 42:

With reference to FASTag, consider the following statements:

1. It is an electronic system with reloadable tag feature for automatic deduction of toll tax.
2. It uses the radio waves to read and capture information stored on a tag.
3. It does not need to be within the direct line-of-sight of the reader to be tracked.

Which of the statements given above is/are correct ?

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

Answer: (d)

Explanation

- FASTag was introduced in 2017, it is an electronic toll collection system with reloadable tag feature which allows automatic deduction of toll without having to stop for carrying out the cash transaction. **Hence, statement 1 is correct.**
 - The reloadable tag allows addition of monetary values multiple times.
 - It is operated by the National Highway Authority of India (NHAI) under the supervision of the Ministry of Road Transport and Highways.
- The tag uses Radio Frequency Identification (RFID) technology and is fixed on the windscreen of the vehicle once active.
 - RFID is the use of radio waves to read and capture information stored on a tag attached to an object. **Hence, statement 2 is correct.**
 - A tag can be read from up to several feet away and does not need to be within the direct line-of-sight of the reader to be tracked. **Hence, statement 3 is correct.**

QUESTION 43:

Consider the following statements:

1. The Election Commission of India (ECI) can postpone the elections to the Legislative Assembly only in the case of natural calamities.
2. In case of early dissolution of the Legislative Assembly, the ECI has to conduct the elections within six month of the dissolution.

Which of the statements given above is/are correct ?

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

Answer: (b)

Explanation

- The **Election Commission (EC) of India** is mandated under law to **hold elections at any time within six months** before the five-year term of the Lok Sabha or Legislative Assembly expires.
 - In the case of early dissolution, EC has to ensure a new Lok Sabha or Assembly is in place **within six months of the dissolution**.
 - The six months is the constitutionally defined limit between two sessions of the House/Assembly (Article 85(1) and Article 174(1) of the Constitution, respectively). **Hence, statement 2 is correct.**
- Article 172(1) states that, in case of a **state of Emergency**, an election can be postponed for one year at a time in addition to a period of six months after the Emergency is lifted.
 - There is no specific legal provision that specifies the circumstances under which elections can be deferred in non-Emergency situations.
 - However, **law and order, natural calamities** like earthquakes and floods, or any other compelling circumstances which are beyond EC's control can be the grounds for extension. **Hence, statement 1 is not correct.**

QUESTION 44:

With reference to NATGRID, consider the following statements:

1. It is established under the National Security Act.
2. It is an integrated intelligence grid which will connect databases of security agencies and economic institutions.
3. It works under the effective control of the Ministry of Home Affairs.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation

- National Intelligence Grid or NATGRID was established in 2009, in the wake of Mumbai terrorist attacks 2008, through governmental notifications rather than legislation passed in Parliament. **Hence, statement 1 is not correct.**
- NATGRID was formed with an aim to collect comprehensive patterns of intelligence that can be readily accessed by intelligence agencies, and will link 10 user agencies with certain databases that would be procured from 21 organisations.
 - The project aims to allow investigation and law enforcement agencies to access real-time information from data stored with agencies such as the Income Tax Department, banks, insurance companies, Indian Railways, credit card transactions, and more. **Hence, statement 2 is correct.**
- It works under the aegis of the Ministry of Home affairs. **Hence, statement 3 is correct.**

QUESTION 45:

Long March 5B' rocket is associated with which of the following?

- (a) Mars mission
- (b) Commercial satellite launching
- (c) Establishing permanent space station
- (d) Launching of communication satellites

Answer: (c)

Explanation

- Recently, China has successfully launched the Long March 5B' rocket and prototype spacecraft.
- It is being considered as China's successful step to operate a permanent space station and send astronauts to the Moon. **Hence, option C is correct.**

QUESTION 46:

Consider the following statements regarding 'Supercapacitor':

1. It is a next-generation energy storage device.
2. It has a higher power density than Lithium-Ion batteries..

Which of the statements given above is/are correct ?

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

Answer: (c)

Explanation

- Supercapacitor is a next-generation energy storage device. They are also known as ultracapacitors. **Hence, statement 1 is correct.**
- It has significant advantages such as **high power density**, long durability, and ultrafast charging characteristics as compared to conventional capacitors and **Lithium-Ion batteries (LIB)**. **Hence, statement 2 is correct.**
- Recently, scientists at the International **Advanced Research Centre for Powder Metallurgy and New Materials (ARCI)** have **developed a simple, low-cost, environment-friendly, and sustainable supercapacitor device.**
 - The supercapacitor is developed from industrial waste cotton based electrode & natural seawater electrolyte.

QUESTION 47:

'Pragyata', recently seen in the news, is related to

- (a) Guidelines by RBI to achieve secured online transactions.
- (b) A commander level MOUs between India and Nepal to solve boundary disputes peacefully.
- (c) Guidelines by the Human Resource Development Ministry on Digital education.
- (d) Guideline by Union Health Ministry to private hospitals for the covid-19 patients' treatment.

Answer: (c)

Explanation

- **PRAGYATA is a title given to the guidelines by the Ministry of Human Resource Development on Digital education. Hence, option C is correct.**
- The guidelines have been prepared by the National Council of Educational Research and Training (NCERT).
- These are only advisory in nature and state governments can formulate their own rules, based on local needs.
- The guidelines include eight steps of online/digital learning i.e. **Plan- Review- Arrange- Guide- Yak (talk)- Assign- Track- Appreciate.**

QUESTION 48:

With reference to the 'Chambal river sanctuary', consider the following statements:

1. The Sanctuary is located entirely in the state of Madhya Pradesh.
2. It is India's only sanctuary for dolphins.

Which of the statements given above is/are correct ?

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

Answer: (d)

Explanation

- The National Chambal Sanctuary is located along river Chambal on the **tri-junction of Rajasthan, Madhya Pradesh and Uttar Pradesh. Hence, statement 1 is not correct.**
 - River Chambal is one of the most pollution-free rivers of India.
 - It is a 960 km long river that originates at the Singar Chouri peak in the northern slopes of the Vindhya mountains (Indore, Madhya Pradesh). From there, it flows in the North direction in Madhya Pradesh for a length of about 346 km and then follows a north-easterly direction for a length of 225 km through Rajasthan.
 - It enters U.P. and flows for about 32 km before joining the Yamuna River in Etawah District.
- Sanctuary is known for critically endangered gharials, the red-crowned roof turtle, and the endangered Ganges river dolphin.
 - There are just 68 dolphins left in the 435-kilometre-long Chambal river sanctuary which passes through three states i.e. Madhya Pradesh, Uttar Pradesh and Rajasthan. **Gangetic Dolphins** are the sanctuary's main attraction.
- **Vikramshila Gangetic Dolphin Sanctuary (VGDS)** in Bihar's Bhagalpur district is India's only sanctuary for dolphins. **Hence, statement 2 is not correct.**

QUESTION 49:

With reference to Hope Mission, consider the following statements:

1. It is the first interplanetary mission for the ASEAN countries.
2. It is to probe the atmosphere of Mars.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 and 2

Answer: (b)

Explanation

- **UAE Hope mission** is one of three missions launching to Mars in 2020. It is the first interplanetary mission for the Arab World. **Hence, statement 1 is not correct.**
 - Other Two Missions on Mars are:
 - ◆ NASA's Mars rover, Perseverance, with instruments to search for chemical signs of past life.
 - ◆ China is also launching an ambitious mission to Mars, Tianwen-1.
- The Hope Mission is aimed at giving planetary scientists their first global view of Martian weather

at all times of the day.

- Also, it will investigate how dust storms and other weather phenomena near the Martian surface speed or slow the loss of the planet's atmosphere into space. **Hence, statement 2 is correct.**

QUESTION 50:

Which of the following is the function of 'T cells'?

- (a) Immune response
- (b) Controlling the sugar level
- (c) Synthesis of protein
- (d) Transporting oxygen

Answer: (a)

Explanation

- **T cells** are so called because they are predominantly produced in the **thymus**.
- They recognise foreign particles (antigen) by a surface expressed, highly variable, T cell receptor (TCR).
- There are two major types of T cells: the helper T cell and the cytotoxic T cell.
- As the names suggest, helper T cells 'help' **other cells of the immune system**, whilst cytotoxic T cells kill virally infected cells and tumours. **Hence, option A is correct.**
- The severity of disease can depend on the strength of these T cell responses.

QUESTION 51:

Which of the following conditions do NOT need to be fulfilled for the issuance of the Writ of Quo Warranto?

- (a) The office must be public and it must be created by the state
- (b) The office must be a substantive one
- (c) There has been a contravention of the Constitution or a statute in appointment.
- (d) It is sought by the aggrieved person.

Answer: (d)

Explanation

Writ of Quo Warranto

In the literal sense, it means 'by what authority or warrant'. It is issued by the court to enquire into the legality of claim of a person to a public office. Hence, it prevents illegal usurpation of public office by a person.

The writ can be issued only in case of a substantive public office of a permanent character created by a statute or by the Constitution. It cannot be issued in cases of Ministerial Office or Private Office. Unlike the other four writs, this can be sought by any interested person and not necessarily by the aggrieved person. **Hence, option (d) is correct.**

QUESTION 52:

Which of the following rulers wrote to Napoleon Bonaparte seeking his help against the British East India Company forces?

- (a) Haider Ali
- (b) Siraj ud Daula
- (c) Tipu Sultan

(d) Suja ud Dhaula

Answer: (c)

Explanation

By the end of the 18th century, in India, the English East India Company was fast developing as the empire building arm of the British Government. But it found its aims being thwarted by the famous Tipu Sultan, the ruler of Mysore.

Knowing the rivalry between the French and the British, Tipu Sultan decided to use the French to bolster himself against the British. French officers were recruited for

training the Mysore army. In 1779, Tipu's father Hyder Ali had protected the French settlement of Mahe in the west coast of India from being overrun by the British.

- Soon the French Revolution of 1792 when Napoleon Bonaparte became the first Consul of France. At that time Tipu wrote constantly to Napoleon seeking his help against the English forces. Accepting his request Napoleon urged the Directory to cede to the request of Tipu Sultan of Mysore Against the British East India Company. **Hence, option (c) is correct.**
- Finally in 1796, the Directory of the French Government decided to take some steps to help their Indian allies. In December that year, a French ship arrived in Mangalore carrying in it Francois Ripaud, who was to advise Tipu about the nature of French help that would be forthcoming.

QUESTION 53:

With reference to the 7th schedule consider the following pairs:

1. State list : Public health and sanitation
2. Union list : Citizenship, naturalization and aliens
3. Concurrent list : Legal, medical and other professionals

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

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

Answer: (b)

Explanation

In the seventh schedule, entry no.- 17 of the Union list is Citizenship, naturalization and aliens. Entry no- 6 of State list is Public health and sanitation. Entry 26 of the Concurrent list is Legal, medical and other professions. **Hence, all the pairs are correctly matched.**

QUESTION 54:

Regarding the Treaty of Salbai 1782, consider the following statements:

1. It was signed at the end of the Second Anglo Maratha War.
2. It guaranteed that the Marathas would support English forces against Hyder Ali.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

The Treaty of Salbai was signed in 1782, by representatives of the Maratha Empire and the British East India Company after long negotiations to settle the outcome of the First Anglo Maratha War (1775–1782) and NOT the Second Anglo Maratha War. **Hence, statement 1 is NOT correct.**

- Under its terms, the Company retained control of Salsette and Broach and acquired guarantees that the Marathas would support English forces against Hyder Ali of Mysore and retake territories in the Carnatic. The Marathas also guaranteed that the French would be prohibited from establishing settlements on their territories. **Hence, statement 2 is correct.**
- In return, the British agreed to pension off their protégé, Raghunath Rao, and acknowledge Madhav Rao as peshwa of the Maratha Empire. The British also gave back all the territories occupied by the British after the Treaty of Purandar were given back to the Marathas. The Treaty of Salbai resulted in a period of relative peace between the Maratha Empire and the British East India Company until the outbreak of the Second Anglo Maratha War in 1802.

QUESTION 55:

The “Downward Filtration Theory” of the British Government in India is related to:

- (a) Drain of wealth from India
- (b) Abolition of caste system
- (c) Education of Indian masses
- (d) None of the above

Answer: (c)

Explanation

The British made English the medium of instruction in the Indian schools and colleges. However, they opened a few English schools and colleges instead of a large number of elementary schools, as the Government was not willing to spend much on education.

- To make up for the paucity of expenditure on education, the British officials had recourse to the so-called “downward filtration theory”.
- Since the allocated funds could educate only a handful of Indians, it was decided to spend them educating a few persons from the upper and middle classes who were expected to assume the task of educating the masses and spreading modern ideas among them. **Hence, (c) is the correct option.**

QUESTION 56:

With reference to the Charter Act of 1833, consider the following statements:

1. East India Company retained its monopoly in trade with China and the tea trade.
2. The Governor-General of Bengal was re-designated as the Governor-General of India.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

The Charter Act of 1833 was passed in the British Parliament which renewed the East India Company's charter for another 20 years. This was also called the Government of India Act 1833 or the Saint Helena Act 1833. East India Company that had retained its monopoly in trade with China and the tea trade in the



Charter Act 1813, lost all of its monopoly by the Charter Act of 1833. **Hence, statement 1 is NOT correct.**

Important Provisions of Charter Act of 1833:

- The company's commercial activities were closed down. It was converted into an administrative body for British Indian possessions. The company's trade links with China were also closed down. This act permitted the English to settle freely in India.
- This act legalised the British colonisation of the country. The company still possessed the Indian territories but it was held 'in trust for his majesty'.
- The Governor-General of Bengal was re-designated as the Governor-General of India. This made Lord William Bentinck the first Governor-General of India. Thus, the country's administration was unified under one control. The Governors of Bombay and Madras lost their legislative powers. **Hence, statement 2 is correct.**
- The Governor-General in council had the authority to amend, repeal or alter any law pertaining to all people and places in British Indian territories whether British, foreign or Indian native. The civil and military affairs of the company were controlled by the Governor-General in council. The Governor-General's council was to have four members. The fourth member had limited powers only. For the first time, the Governor-General's government was called the Government of India and the council was called India Council.
- Indian Law Commission: The act mandated that any law made in India was to be put before the British Parliament and was to be called 'Act'. As per the act, an Indian Law Commission was established. The first Law Commission had Lord Macaulay as its chairman. It sought to codify all Indian law.
- Split in Bengal Presidency: The act provided for the Presidency of Bengal to be divided into the Presidencies of Agra and Fort William. But this never came into effect. Indians in Government service This was the first act that gave permission for Indians to have a share in the country's administration. It stated that merit should be the basis of employment to government service and not birth, colour, religion or race.
- Slavery: The act provided for the mitigation of slavery existing in India at that time. The British Parliament abolished slavery in Britain and all its possessions in 1833.
- Tilt towards Christianity: Since the number of British residents in the country was increasing, the act allowed for having three Bishops in India. It also sought to regulate the establishment of Christian institutions in India.

QUESTION 57:

Which of the following are the defining features of liberal democracy?

1. Constitutional government based on rules and laws.
2. Guarantees of civil liberties and individual rights.
3. It invests political authority with potentially unlimited power.

Select the correct answer using the code given below:

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

Answer: (b)

Explanation

Democracy transforms into liberal democracy when principles such as human rights and freedoms are further strengthened. **Hence, statement 2 is correct.**



- Democracy itself is based on the idea of rule of law, which also connotes constitutional governments. **Hence, statement 1 is correct.**
- Unlimited powers to the government is a characteristic of authoritarianism. **Hence, statement 3 is NOT correct.**

QUESTION 58:

With reference to the establishment of Welby Commission, which of the following is correct?

- (a) It was set up to suggest measures to eradicate famines in India.
- (b) It was constituted to suggest reforms in Higher education in India.
- (c) It was set up to look into the expenditures of British Indian government.
- (d) It aimed to report on the working of dyarchy introduced by the Government of India Act (1919).

Answer: (c)

Explanation

In 1895, the Royal Commission on the Administration of Expenditure of India, commonly known as the Welby Commission, was set up to look into Indian expenditures. The Commission's membership included: Lord Welby (1832-1915) Lord Chaman (1859-1925) and T.R. Buchanan as Parliamentary representatives, and

William Wedderburn (1838-1918), Dadabhai Naoroji (1825-1917), and William S. Caine (1842-1903) as representatives of Indian interests. This improved the economic condition of India by reducing excessive expenditure. **Hence, option (c) is correct.**

- Welby Commission was an effort of early nationalists. Among those who provided evidence to the Commission were G.K. Gokhale who deposed before the commission in 1897. The Welby Commission's report, published in 1900, showed a number of cases where excessive or unjust payments had been made by the Indian government.

QUESTION 59:

The Preamble of the Constitution of India, as adopted on 26th November, 1949 originally described India as a:

1. Sovereign Republic
2. Democratic Republic
3. Socialist Republic
4. Secular Republic

Select the correct answer using the code given below

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

Answer: (b)

Explanation

The Preamble has been amended only once so far, in 1976, by the 42nd Constitutional Amendment Act, which has added three new words— Socialist, Secular and Integrity—to the Preamble.

"We, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC and to secure to all its citizens:

JUSTICE, Social, Economic and Political;



LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity; and to promote among them all;

FRATERNITY assuring the dignity of the individual and the unity and integrity of the Nation; IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION”.

Hence, option (b) is correct.

QUESTION 60:

With which of the following land revenue system Saharanpur rules of 1855 is associated?

- (a) Zamindari system
- (b) Ryotwari system
- (c) Mahalwari system
- (d) Ijaradari System

Answer: (c)

Explanation

The idea of Mahalwari system was first presented in the Minute of 1st July 1819 by Holt Mackenzie, then Secretary to the Territorial Department, Board of Revenue, who declared Permanent Zamindari Settlement a “Loose Bargain” for the British Empire. Mackenzie’s recommendation incorporated in the Regulation VII of 1822 and settlement was made on the basis of almost 90 % of the rental value, payable by the Cultivators. The settlement attained maturity by the Regulation IX of 1833 under the supervision of R. Martins Bird and completed by James Thomason in 1844. The state demand of land revenue in Mahalwari system was fixed at 66 % of the rental value and the system was made for 20 or 30 years. The 66% state demand was reduced to 50 % of the rental value under Saharanpur rules of 1855 by the Governor-General Lord Dalhousie. Hence, option (c) is correct.

QUESTION 61:

Consider the following pairs:

Types of Droughts

- 1. Meteorological drought
- 2. Agricultural drought
- 3. Hydrological drought

Reasons

- Inadequate Rainfall
- Low water storage in aquifers etc
- Low soil moisture

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

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

Answer: (d)

Explanation

Drought is the consequence of a natural reduction in the amount of precipitation over an extended period of time, usually a season or more in length, often associated with other climatic factors

Different types of drought are:

- **Meteorological Drought:** It is a situation when there is a prolonged period of inadequate rainfall marked with mal-distribution of the same over time and space. Hence, pair 1 is correctly matched.
- **Agricultural Drought:** It is also known as soil moisture drought, characterised by low soil moisture

that is necessary to support the crops, thereby resulting in crop failures. **Hence, pair 2 is NOT correctly matched.**

- **Hydrological Drought:** It results when the availability of water in different storages and reservoirs like aquifers, lakes, reservoirs, etc. falls below what the precipitation can replenish. **Hence, pair 3 is NOT correctly matched.**
- **Socio-Economic Drought:** Abnormal water shortage affects all aspects of the established economy of a region. This in turn adversely affects the social fabric of the society creating unemployment, migration, discontent and various other problems in the society.

QUESTION 62:

What is the correct sequence of occurrence of the following water bodies in North America as one proceeds from north to south?

1. Lake Superior
2. Lake Erie
3. Lake Winnipeg
4. Hudson Bay

Select the correct answer using the code given below:

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

Answer: (c)

Explanation

The correct North to South sequence is Hudson Bay > Lake Winnipeg > Lake Superior > Lake Erie. **Hence, option (c) is correct.**

QUESTION 63:

The cool air of the high plateaus and ice fields draining into the valley is called:

- (a) Katabatic Wind
- (b) Valley Breeze
- (c) Adiabatic Wind
- (d) Anabatic Wind

Answer: (a)

Exp.: In mountainous regions, during the day the slopes get heated up and air moves upslope and to fill the resulting gap the air from the valley blows up the valley. This wind is known as the valley breeze.

During the night the slopes get cooled and the dense air descends into the valley as the mountain wind. The cool air of the high plateaus and ice fields draining into the valley is called katabatic wind. **Hence, option (a) is correct.**

Anabatic Wind is a warm wind which blows up a steep slope. It is driven by heating of the slope through insolation.

Adiabatic Wind: The normal air flow over the rocky mountains (USA) is West to East. The air loses most of its moisture content and is chilled as it climbs the Western side of the mountain. When it descends on the Eastern side it gets warmed up.

QUESTION 64:

Recently five varieties of coffee were awarded GI Tag, consider the following pairs:

Name		Place
1. Araku Valley Arabica	:	Nagaland
2. Bababudangiri Arabica coffee	:	Karnataka
3. Coorg Arabica coffee	:	Andhra Pradesh

Which of the pairs given above is/are NOT correctly matched?

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

Answer: (d)

Explanation

The Department for Promotion of Industry and Internal Trade, under the Ministry of Commerce and Industry, has recently awarded GI tag to

- 1. Coorg Arabica coffee from Karnataka. **Hence pair 3 is NOT correct.**
- 2. Wayanad Robusta coffee from Kerala,
- 3. Chikmagalur Arabica from Karnataka,
- 4. Araku Valley Arabica from Andhra Pradesh. **Hence pair 1 is NOT correct.**
- 5. Bababudangiri Arabica coffee from Karnataka. **Hence pair 2 is correct.**

QUESTION 65:

Which of the following are caused by winds in the desert regions?

- 1. Deflation
- 2. Exfoliation
- 3. Abrasion
- 4. Attrition

Select the correct answer using the code given below:

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

Answer: (b)

Explanation

Wind erosion in desert areas produces deflation, abrasion and attrition. **Hence, option (b) is correct.**

- **Deflation:** This process involves the lifting and blowing away of loose materials from the ground.
- **Abrasion:** The sand-blasting of rock surfaces by winds when they hurl sand particles against them is called abrasion.
- **Attrition:** When wind-borne particles roll against one another in collision they wear each other away so that their sizes are greatly reduced and grains are rounded into millet seed sand. This process is called attrition.
- **Exfoliation:** The heating of the rocks causes the outer surface to expand and so pries itself off from the interior rocks, so that it peels off in successive very thin layers. Such an onion-peeling process of mechanical weathering is called exfoliation.

QUESTION 66:

With reference to Plantation Agriculture, consider the following statements:

1. In parts of Western Africa, plantation of agricultural crops like cocoa and coffee was started by the Britishers.
2. Plantation agriculture was primarily introduced in the tropic regions of the colonies by the Europeans.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

Plantation agriculture was introduced by the Europeans in colonies situated in the tropics. **Hence, statement 2 is correct.**

- Some of the important plantation crops are tea, coffee, cocoa, rubber, cotton, oil palm, sugarcane, bananas and pineapples.
- The characteristic features of this type of farming are large estates or plantations, large capital investment, managerial and technical support, scientific methods of cultivation, single crop specialisation, cheap labour, and a good system of transportation which links the estates to the factories and markets for the export of the products.
- The French established cocoa and coffee plantations in west Africa. The British set up large tea gardens in India and Sri Lanka, rubber plantations in Malaysia and sugarcane and banana plantations in the West Indies. **Hence, statement 1 is NOT correct.**
- Spanish and Americans invested heavily in coconut and sugarcane plantations in the Philippines.
- The Dutch once had a monopoly over sugarcane plantation in Indonesia.

QUESTION 67:

With reference to the 'Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001, consider the following statements:

1. Under this act, Breeders (Seed Producers) will have exclusive rights to produce, sell, market, distribute, import or export the protected variety.
2. The act protects the rights of farmers and plant breeders but researchers on plant varieties are not covered under this act.
3. The National Gene Fund has also been established under this act.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation

Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001

- The aim of the act is the establishment of an effective system for the protection of plant varieties,

the rights of farmers and plant breeders and to encourage the development of new varieties of plants.

- The act also establishes Protection of Plant Varieties and Farmers' Rights Authority under the Ministry of Agriculture and Farmers Welfare.
 - The major function of Authority includes Registration of new plant varieties
 - documentation of varieties registered
 - Preservation of plant genetic resource
 - Maintenance of the National Register of Plant Varieties
 - Maintenance of National Gene Bank (for conserving seeds of registered varieties)
- National Gene Fund
 - In 2007, the National Gene Fund was constituted under the PPV&FR Act 2001. **Hence, statement 3 is correct.**
 - It started with an initial amount of Rs 50 lakh from the Central government and gets a contribution from the money paid by plant breeders as registration and annual fee.
- Rights under the Act Breeders' Rights Researchers' Rights Farmers' Rights
- Breeders (Seed Producers) will have exclusive rights to produce, sell, market, distribute, import or export the protected variety. **Hence, Statement 1 is correct.**
- A breeder can exercise for civil remedy in case of infringement of rights
- Researcher can use any of the registered variety
- under the Act for conducting an experiment or research. **Hence, statement 2 is NOT correct.**
- Researchers can use the initial source of variety for the purpose of developing another variety but repeated use needs the prior permission of the registered breeder.
- A farmer who has evolved or developed a new variety is entitled to registration and protection in like manner as a breeder of a variety.
- A farmer can save, use, sow, re-sow, exchange, share or sell his farm produce including seed of a variety protected under the PPV&FR Act, 2001
- However, the farmer shall not be entitled to sell branded seed of a variety protected under the PPV&FR Act, 2001.
- There is also a provision for compensation to the farmers for non-performance of variety.
- The farmer shall not be liable to pay any fee in any proceeding before the Authority or Registrar or the Tribunal or the High Court under the Act.

QUESTION 68:

A program called FASER has been launched to discover new particles which constitute dark matter. Which of the following organizations is responsible for conducting the program?

- (a) National Aeronautics and Space Administration
- (b) European Organization for Nuclear Research
- (c) Roscosmos State Corporation for Space Activities
- (d) Indian Space Research Organisation

Answer: (b)

Explanation

The European Organization for Nuclear Research (CERN), which hosts the world's largest and most powerful particle accelerator, has announced new experiments named FASER to search for dark matter.

Hence, option (b) is correct.

- CERN is one of the world's largest and most respected centres for scientific research.
- FASER, or the Forward Search Experiment, will complement CERN's ongoing physics programme,

extending its discovery potential to several new particles.

- Some of these sought-after particles are associated with dark matter, which is a hypothesised kind of matter that does not interact with the electromagnetic force and consequently cannot be directly detected using emitted light.

QUESTION 69:

With reference to Salinity of ocean water, consider the following statements:

1. Salinity of ocean water is directly proportional to its density.
2. The salinity of the Arabian Sea is higher than that of Bay of Bengal.
3. The North Sea records the lowest salinity as salinity gradually decreases towards the North.

Which of the statements given above are correct?

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

Answer: (a)

Explanation

Salinity is the term used to define the total content of dissolved salts in seawater. It is calculated as the amount of salt (in gm) dissolved in 1,000 gm (1 kg) of seawater.

- It is usually expressed as thousand (o/oo) or ppt.
- The highest salinity is recorded between 15° and 20° latitudes. Maximum salinity (37 o/oo) is observed between 20° N and 30° N and 20° W - 60° W.
- Salinity gradually decreases towards the north. The North Sea, in spite of its location in higher latitudes, records higher salinity due to more saline water brought by the North Atlantic Drift. **Hence, statement 3 is NOT correct.**
- Baltic Sea records low salinity due to the influx of river water in large quantities. The Mediterranean Sea records higher salinity due to high evaporation. Salinity is, however, very low in the Black Sea due to enormous freshwater influx by rivers.
- The low salinity trend is observed in the Bay of Bengal due to the influx of river water. On the contrary, the Arabian Sea shows higher salinity due to high evaporation and low influx of freshwater. **Hence, statement 2 is correct.**
- Salinity generally increases with depth and there is a zone called the halocline, where salinity increases sharply. Other factors being constant, increasing salinity of seawater causes its density to increase. **Hence, statement 1 is correct.**
- High salinity seawater, generally, sinks below the lower salinity water. This leads to stratification by salinity.

QUESTION 70:

With reference to Waves, consider the following statements:

1. Wave height is the vertical distance between two successive wave crests or troughs as they pass a fixed point.
2. Wave frequency is the number of waves passing a given point during a one-second time interval.

Which of the statements given above is/are correct?

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

- (c) Both 1 and 2
(d) Neither 1 nor 2

Answer: (b)

Explanation

Waves are actually the energy, not the water as such, which moves across the ocean surface. Water particles only travel in a small circle as a wave passes. Wind provides energy to the waves. Wind causes waves to travel in the ocean and the energy is released on shorelines. The motion of the surface water seldom affects the stagnant deep bottom water of the oceans. As a wave approaches the beach, it slows down. This is due to the friction occurring between the dynamic water and the seafloor. And, when the depth of water is less than half the wavelength of the wave, the wave breaks. The largest waves are found in the open oceans. Waves continue to grow larger as they move and absorb energy from the wind.

Motion of Waves and Water Molecules

Characteristics of Waves

- **Wave crest and trough:** The highest and lowest points of a wave are called the crest and trough respectively.
- **Wave height:** It is the vertical distance from the bottom of a trough to the top of a crest of a wave. **Hence, statement 1 is NOT correct.**
- **Wave amplitude:** It is one-half of the wave height.
- **Wave period:** It is merely the time interval between two successive wave crests or troughs as they pass a fixed point.
- **Wavelength:** It is the horizontal distance between two successive crests.
- **Wave speed:** It is the rate at which the wave moves through the water, and is measured in knots.
- **Wave frequency:** It is the number of waves passing a given point during a one-second time interval. **Hence, statement 2 is correct.**

QUESTION 71:

Which of the following pairs is/are correctly matched?

Anglo-French Wars

1. First Carnatic War
2. Second Carnatic War
3. Third Carnatic War

Main Causes

- Interference in local dynastic disputes
Extension of Anglo- French war in Europe
Seven Years War

Select the correct answer using the code given below:

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

Answer: (c)

Explanation

First Carnatic War (1740-48):

The First Carnatic War was an extension of the Anglo- French war in Europe which was caused by the Austrian war of succession.

- **Immediate cause-** provocation by the English Navy (French ships were seized)
- **Result-** Treaty of Aix-La Chapelle, Madras handed over to British and the French got their territories in North America. **Hence, pair 1 is NOT correctly matched.**

Second Carnatic War (1749-54):

- The background for the Second Carnatic war was provided by rivalry in India. Dupleix sought to increase power and influence by interfering in local dynastic disputes to defeat English.
- **Result-** The French authorities, annoyed at the heavy financial losses that Dupleix's policy involved, decided to recall him in 1754. Hence, pair 2 is NOT correctly matched.

Third Carnatic War (1758-63):

- In Europe, when Austria wanted to recover Silesia in 1756, the Seven Years War (1756-63) started. Britain and France were once again on opposite sides.
- **Battle of Wandiwash:** The decisive battle of the Third Carnatic War was won by the English on January 22, 1760 at Wandiwash (or Vandavasi) in Tamil Nadu.
- **Result:** Although the Treaty of Peace of Paris (1763) restored to the French their factories in India, the French political influence disappeared after the war.
- Significance: The victory at Wandiwash left the English East India Company with no European rival in India. **Hence, pair 3 is correctly matched.**

QUESTION 72:

Consider the following statements about 'Sanyasi Rebellion':

1. Sanyasis were joined by a large number of dispossessed small zamindars, disbanded soldiers and rural poor.
2. They were suppressed violently within a month by Warren Hastings
3. Equal participation of Hindus and Muslims characterized this rebellion.
4. Bankim Chandra's novel, Devi Chaudhurani, was based on this struggle.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation

Sanyasi Rebellion (1763-1800)

- The famine of 1770 and the harsh economic conditions compelled a group of sanyasis in Eastern India to fight the British.
- Originally peasants, even some evicted from land and sanyasis were joined by a large number of dispossessed small zamindars, disbanded soldiers and rural poor. **Hence, statement 1 is correct.**
- It was only after a prolonged action that Warren Hastings could subdue the sanyasis. **Hence, statement 2 is NOT correct.**
- Equal participation of Hindus and Muslims characterized the uprisings. **Hence, statement 3 is correct.**
- Majnum Shah (or Majnu Shah), Chirag Ali, Musa Shah, Bhawani Pathak and Debi Chaudhurani were important leaders.
- Debi Chaudhurani's participation shows the role women played in early resistances against the British.
- Anandamath, a semi-historical novel by Bankim Chandra Chattopadhyay, is based on the Sanyasi Revolt. Bankim Chandra also wrote a novel, Devi Chaudhurani, as he saw the importance of women taking up the struggle against an alien rule that posed a threat to traditional Indian values. **Hence, statement 4 is correct.**

QUESTION 73:

In the context of the Indian history, 'cartaz' system refers to?

- (a) Political system introduced in Portuguese colonies.
- (b) System introduced by the French to control trade of spices in east Asia.
- (c) A system to control Naval trade.
- (d) A system introduced to spread Christianity in India and Asia

Answer: (c)

Explanation

Portuguese Cartaz system referred to a naval trade license or pass issued by the Portuguese in Indian Ocean during the sixteenth century. **Hence, option (c) is correct.** A similar system used by British was the navicert system in the 20th century.

QUESTION 74:

Which of the following institutions/ministries is responsible for the implementation of the National Educational Alliance for Technology (NEAT) Scheme?

- (a) Ministry of Human Resource Development
- (b) National Assessment and Accreditation Council
- (c) All India Council for Technical Education
- (d) National Board of Accreditation

Answer: (b)

Explanation

Ministry of Human Resource Development announced a new PPP Scheme, National Educational Alliance for Technology (NEAT) for using technology for better learning outcomes in Higher Education.

- The objective is to use Artificial Intelligence to make learning more personalised and customised as per the requirements of the learner.
- All India Council for Technical Education (AICTE) would be the implementing agency for NEAT programme. **Hence, option (c) is correct.**
- The scheme shall be administered under the guidance of an Apex Committee constituted by MHRD.
- Independent Expert Committees would be constituted for evaluating and selecting the EdTech solutions. MoUs will be signed with the shortlisted EdTech companies.
- Awareness programs would be taken up by MHRD to create awareness of the NEAT solutions to teachers and students.
- MHRD has proposed to launch and operationalise NEAT in early November 2019.

QUESTION 75:

Consider the following statements about Mahalwari system:

1. It was introduced in Central provinces, NWFP, Agra, and Punjab.
2. It was introduced by William Bentick.
3. It made the village committee responsible for collection of taxes.

Which of the statements given above is/are correct?

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

(d) 1, 2 and 3

Answer: (d)

Explanation

Mahalwari system was introduced in 1833 during the period of William Bentick. It was introduced in Central Province, North-West Frontier, Agra, Punjab, Gangetic Valley, etc of British India. **Hence, statement 1 and 2 are correct.**

- The Mahalwari system had many provisions of both the Zamindari System and Ryotwari System. In this system, the land was divided into Mahals. Each Mahal comprises one or more villages. Ownership rights were vested with the peasants. The villages committee was held responsible for collection of the taxes. **Hence, statement 3 is correct.**

QUESTION 76:

Which among the following changes were brought in the army after the revolt of 1857?

1. The proportion of Europeans to Indians in the army was decreased.
2. Communal, tribal and regional loyalties were encouraged amongst the soldiers.
3. Indians were excluded from the officer corps.

Select the correct answer using the code given below:

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

Answer: (c)

Explanation

The Indian army was carefully reorganized after 1858. Some changes were made necessary by the transfer of power to the Crown. Firstly, the domination of the army by its European branch was carefully guaranteed.

- The proportion of Europeans to Indians in the army was raised. Moreover, the European troops were kept in key geographical and military positions. **Hence, statement 1 is NOT correct.**
- The organization of the Indian section of the army was based on the policy of divide and rule so as to prevent its chance of uniting again in an anti-British uprising. Communal, caste, tribal and regional loyalties were encouraged. For example caste and communal companies were introduced in most of the regiments. **Hence, statement 2 is correct.**
- The policy of excluding Indians from the officer corps was strictly maintained. Till 1914, no Indian could rise higher than the rank of a subedar. **Hence, statement 3 is correct.**

QUESTION 77:

Consider the following statements regarding the Charter Act of 1833:

1. It made the Governor-General of Bengal the Governor-General of India.
2. It provided legislative powers to the Bombay and Madras presidencies.
3. It Introduced an open competition system for selection and recruitment of civil servants.

Which of the statements given above is/are correct?

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

(d) 1, 2 and 3

Answer: (a)

Explanation

It made the Governor-General of Bengal as the Governor-General of India and vested in him all civil and military powers. Thus, the act created, for the first time, a Government of India having authority over the entire territorial area possessed by the British in India. **Hence, statement 1 is correct.**

- Lord William Bentick was the first governor-general of India. It deprived the governor of Bombay and Madras of their legislative powers. The Governor-General of India was given exclusive legislative powers for the entire British India. **Hence, statement 2 is NOT correct.**
- The laws made under the previous acts were called as Regulations while laws made under this act were called as Acts. It ended the activities of the East India Company as a commercial body, which became a purely administrative body.
- It provided that the company's territories in India were held by the company 'in trust for His Majesty, His heirs and successors'.
- This Act attempted to introduce a system of open competition for selection of civil servants, and stated that the Indians should not be debarred from holding any place, office and employment under the Company. However, this provision was negated after opposition from the Court of Directors. It was under the Charter Act of 1853 that open competition was introduced. **Hence, statement 3 is NOT correct.**
- This act allowed wider space to the British in India's administration. It ended the British India Company's commercial activities and transformed into the British Crown's trustee in administering India.

QUESTION 78:

To promote indigenous entrepreneurship in the Micro, Small and Medium Enterprises Sector (MSME), which one of the following has been proposed by the government recently?

- (a) National Informatics Centres
- (b) Enterprise Development centres
- (c) Office of Development Commissioner
- (d) National Centre For Design & Product Development

Answer: (b)

Explanation

Government of India is in the process of developing Enterprise Development Centres (EDCs).

- These centres are aimed at developing a cadre of indigenous entrepreneurs in the Micro, Small and Medium Enterprises Sectors (MSMEs). **Hence, option (b) is correct.**
- The EDCs will be similar to incubators for start-ups.
- The centres will be broad-based and shall be run by special purpose vehicles in partnership with the private sector, business management organisations, local industry associations.
- The EDCs will also have "enterprise clinics" for struggling firms, which the government hopes will reduce the number of small businesses falling into a debt trap financed by bank loans.
- The centres would offer credit facilitation and syndication, export promotion and supplier inclusion.

QUESTION 79:

In the context of Lord Macaulay's Education Policy, 1835, which of the following is NOT correct?

- (a) It was an attempt by the British to create a system of education for the upper class.



- (b) Abolished the Persian language in the court and introduced English as the court language.
- (c) Engineering institute was established at Roorkee.
- (d) Printing of English books was heavily regulated and the cost of books became prohibitively expensive.

Answer: (d)

Explanation

It was an attempt to create that system of education which educates only upper strata of society through English.

- English became a court language and Persian was abolished as a court language.
- Printings of English books were made free and available at very low price.
- English education got more funds as compared to oriental learning.
- In 1849, JED Bethune founded Bethune School. Agriculture Institute was established at Pusa (Bihar) Engineering Institute was established at Roorkee. **Hence, option (d) is correct.**

QUESTION 80:

Consider the following pairs:

Europeans

1. French
2. Portuguese
3. Dutch

Centre of Influence

- Chandernagor
- Goa
- Masulipatnam

Which of the pairs given above are correctly matched?

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

Answer: (d)

Explanation

The Portuguese hold over the coastal areas and superiority in naval power helped them significantly. By the end of the 16th century, the Portuguese captured not only Goa, Daman, Diu, and Salsette but also a vast stretches along the Indian coast.

The French establishments included Pondicherry, Karaikal and Yanam on the Coromandel Coast, Mahe on the Malabar Coast and Chandernagor in Bengal.

The Dutch, during their stay in India, tried their hands on the minting of coinages. As their trade flourished they established mints at Cochin, Masulipattam, Nagapatam Pondicherry. **Hence, option (d) is correct.**

The Danish East India Company was established in 1616 and, in 1620, they founded a factory at Tranquebar near Tanjore, on the eastern coast of India. Their principal settlement was at Serampore near Calcutta.

QUESTION 81:

India's first Lithium Ion GigaFactory is being setup in:

- (a) Andhra Pradesh
- (b) Maharashtra
- (c) Karnataka
- (d) Haryana

Answer: (a)

Explanation

Munoth Industries Limited will set up India's first lithium ion cell production project by investing Rs 799 crore in three phases in Tirupati, Andhra Pradesh, Bharat Heavy Electricals Limited (BHEL) and Libcoin are in dialogue to form a world class consortium to initially build 1GWh lithium ion battery plant in India. **Hence, option (a) is correct.**

QUESTION 82:

Which of the following is/are programme/ programmes initiated by the Department of Biotechnology (DBT) Ministry of Science & Technology?

1. The Human Genetics and Genome Analysis program
2. BioPharma Mission
3. Biotech-KISAN scheme

Select the correct answer using the code given below:

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

Answer: (d)

Explanation

BioPharma Mission is designed in a manner in which it addresses the key components of the Vision outlined in the National Missions like "Make in India" and "Start up India" and also aims to take forward the commitments made by DBT in the National Biotechnology Development Strategy.

- It enables and nurtures an ecosystem for preparing India's technological and product development capabilities in biopharmaceuticals and development of product leads that are at advanced stages of the product development lifecycle and relevant to the public health need in vaccine, biosimilar and medical devices & diagnostics.
- The Human Genetics and Genome Analysis program addresses issues related to specific inherited diseases concerning Indian population and major steps have been taken by the Department towards better understanding of genetic disorders prevalent in our country in terms of new research on diagnosis. Considering the higher prevalence of genetic disorders, many consortia based R&D projects have been supported in the thematic area Genomics to Health with priority on Monogenic Disorders. Aim/Objectives of the Programme:
 - Advance our understanding of genetic and genomic components of human physiology and pathophysiology, and the interactions of these components with environmental factors and cultural practices, by promoting the conduct of cutting-edge research involving individuals, families and populations.
 - Translate the understanding thus acquired to the improvement of human health by promoting development and dissemination of genomic methodologies and tools for prediction and prevention of human disease, and for therapeutic intervention. The government is setting up specialist laboratories in the country to conduct tests for genetic diseases, which is a leading cause of death among infants and children in the poorest districts across the country. There are 117 aspirational districts that lack such diagnostic facilities. The programme addresses issues related to specific inherited diseases concerning the Indian population. Genetic Disorders in India
 - Common genetic disorders in India are Beta-Thalassemia, Cystic Fibrosis, Sickle Cell Anaemia, Spinal Muscular Atrophy and Haemophilia.



- Beta thalassemia is a blood disorder that reduces the production of hemoglobin.
 - Cystic fibrosis is a disorder that causes severe damage to the lungs, digestive system and other organs in the body.
 - Sickle cell anemia, or sickle cell disease (SCD), is a genetic disease of the red blood cells (RBCs).
 - Spinal muscular atrophy is a disorder characterized by weakness and wasting in muscles used for movement (skeletal muscles).
- Biotech-KISAN scheme is a farmer centric scheme for farmers, developed by and with farmers. It is a Pan-India program, following a hub-and-spoke model and stimulates entrepreneurship and innovation in farmers and empowers women.
 - The Biotech- KISAN Hubs are expected to fulfil the technology requirement to generate agriculture and bio- resource related jobs and better livelihood ensuring biotechnological benefits to small and marginal farmers.

Biotech-KISAN also has a unique feature to identify and promote local farm leadership in both genders. Such leadership helps to develop science based farming besides facilitating transfer of knowledge. So far a total of eight Biotech-KISAN Hubs in different Agro-climatic Zones have been supported.

All the programmes given above have been initiated by the Department of Biotechnology (DBT) Ministry of Science & Technology in different areas where biotechnological applications could be used extensively for public good. **Hence, option (d) is correct.**

QUESTION 83:

The terms 'Aerogel', 'Blue Air' and 'Frozen Smoke' are sometimes seen in the news in the context of:

- (a) Pollution control
- (b) Insulation
- (c) Archaeology
- (d) Agriculture

Answer: (b)

Explanation

Indian Space and Research Organisation (ISRO) has developed the world's lightest insulating material 'silica aerogel', also referred to as "frozen smoke" or "blue air". It is actually a solid but within its complex matrix it encapsulates 99 percent air. This gives it several unique properties— it is incredibly light and is a great thermal insulator. **Hence, option (b) is correct.**

QUESTION 84:

Atmospheric Waves Experiment (AWE) is related to:

- (a) Study the space weather from the International Space Station.
- (b) Study the evolution of the universe.
- (c) Capture the interaction between a dark matter particle and the nucleus of a xenon atom.
- (d) Study the first type of molecule of the universe.

Answer: (a)

Explanation

Atmospheric Waves Experiment (AWE):

- AWE is a Mission of Opportunity under NASA's Heliophysics Explorers Program, which conducts focused scientific research and develops instrumentation to fill the scientific gaps between the agency's larger missions.
- This mission will help scientists understand and, ultimately, forecast the vast space weather system

around our planet.

- The Explorers Program seeks innovative ideas for small and cost-constrained missions that can help unravel the mysteries of the universe and explore our place in it.
 - This mission absolutely meets that standard with a creative and cost-effective mission to solve mysteries about Earth's upper atmosphere. AWE was selected for development based on its potential science value and the feasibility of its development plans.
 - Space weather is important because it can have profound impacts – affecting technology and astronauts in space, disrupting radio communications and, at its most severe, overwhelming power grids.
 - The Atmospheric Waves Experiment (AWE) mission will cost \$42 million and is planned to launch in August 2022, attached to the exterior of the Earth-orbiting International Space Station.
 - From its space station perch, AWE will focus on colorful bands of light in Earth's atmosphere, called airglow, to determine what combination of forces drive space weather in the upper atmosphere.
- Hence, option (a) is correct.**

QUESTION 85:

With reference to guidelines released for Evaluation of Nanopharmaceuticals in India recently, which of the following statements is/are correct?

1. It will cover nanopharmaceuticals in the form of finished formulation as well as Active Pharmaceutical Ingredient (API) of a new molecule.
2. The impact of nanomaterial waste disposal on the environment should be declared.

Select the correct answer using the code given below:

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

Answer: (c)

Explanation

Nanopharmaceuticals represent an emerging field where the sizes of the drug particle or a therapeutic delivery system work at the nanoscale.

- Nanomaterial is defined as material having a particle size in the range of 1 to 100 nm in at least one dimension.
- Nanopharmaceutical reduces the cost of drug discovery, design & development and enhances the drug delivery process.
- **Guidelines for Evaluation of Nanopharmaceuticals in India:**
 - The nano-size range should be declared in the product specification.
 - The particles should be within the claimed nano-size range in all given testing conditions.
 - The detailed methods of the manufacturing process.
 - The impact of nanomaterial waste disposal on the environment should also be declared. **Hence, statement 2 is correct.**
 - The nanopharmaceuticals reduce toxic systemic side effects, resulting in better patient compliance.
 - A Nanocarrier is a nanomaterial being used as a transport module for another substance like a drug.
- It will cover nanopharmaceuticals in the form of finished formulation as well as Active Pharmaceutical Ingredient (API) of a new molecule or an already approved molecule with altered nanoscale



dimensions, properties. Hence, statement 1 is correct.

- It also covers the phenomenon associated with the application of nanotechnology intended to be used for treatment, in vivo diagnosis, mitigation, cure or prevention of diseases and disorders in humans.
- Therefore pharmaceutical companies are applying nanotechnology to enhance or supplement drug target discovery and drug delivery.

QUESTION 86:

Which of the following is the first type of molecule that formed in the universe?

- (a) Carbon monoxide
- (b) Helium hydride
- (c) Molecular hydrogen
- (d) Argon isotope

Answer: (b)

Explanation

About more than 13 billion years ago, following the big bang, the early universe was hot, and all that existed were a few types of atoms, mostly helium and hydrogen.

- As atoms combined to form the first molecules, the universe was finally able to cool and began to take shape.
- Scientists believe that around 100,000 years after the big bang, helium and hydrogen combined to make a molecule called helium hydride for the first time. **Hence, option (b) is correct.**
- NASA's Stratospheric Observatory for Infrared Astronomy, or SOFIA found modern helium hydride in a planetary nebula, a remnant of what was once a Sun-like star. Located 3,000 light-years away near the constellation Cygnus, this planetary nebula, called NGC 7027, has conditions that allow this mystery molecule to form.
- The discovery serves as proof that helium hydride can, in fact, exist in space.
- This confirms a key part of basic understanding of the chemistry of the early universe and how it evolved over billions of years into the complex chemistry of today.

QUESTION 87:

With reference to GRAPES-3 muon telescope, consider the following statements:

1. GRAPES-3 muon telescope is a large telescope launched by NASA.
2. It is jointly operated by USA and India.
3. GRAPES-3 muon telescope can record the electric potential present in a thundercloud.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

The GRAPES-3 muon telescope (Gamma Ray Astronomy PeV Energies phase-3) is a sensitive instrument operated by the Cosmic Ray Laboratory of the Tata Institute of Fundamental Research in Udhagamandalam (Ooty) for a collaboration of several institutes and universities from Japan and India.

Hence, statements 1 and 2 are NOT correct.

- It is designed to study cosmic rays with an array of air shower detectors and a large area muon detectors.
- The muon intensity changes due to the presence of electric potential in thunderclouds.
- Therefore, this change in the muon intensity measured by the GRAPES-3 muon telescope can be exploited to estimate the electric potential in the thundercloud.
- For the first time in the world, researchers at the GRAPES-3 muon telescope facility in Ooty have measured the electrical potential, size and height of a thundercloud that passed overhead on December 1, 2014.
- It shows that this particular thunderstorm was a massive (400 sq. km.) cloud, storing about a trillion Joules of energy. **Hence, statement 3 is correct.**

QUESTION 88:

Consider the following statements:

1. Acute flaccid paralysis (AFP) is an indicator of Polio but does not correlate with Zika Virus.
2. In India, polio surveillance network system is used to track and stop measles outbreaks.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

Zika virus can trigger Guillain-Barré syndrome (GBS), a rare condition in which a person's immune system attacks the peripheral nerves and which may, in severe cases, result in near-total paralysis.

- Recently scientists examining patients with Guillain–Barre syndrome (GBS) in south India have found the presence of antibodies against Zika virus (ZIKV).
- This indicates the possibility that the patients who got infected from the ZIKA virus also contributed to GBS disease.
- Acute flaccid paralysis (AFP) is an indicator of both GBS and polio. As Guillain-Barré syndrome has been associated with Zika virus infection, increases in the incidence of AFP – routinely reported to the Global Polio Eradication Initiative – might provide a useful early warning for Zika virus outbreaks in resource- constrained settings. **Hence, statement 1 is NOT correct.**
- A significant increase in reported cases of AFP are correlated with Zika virus emergence on one island, Solomon Islands.
- Polio surveillance network has been used effectively around the world to detect diseases other than polio such as measles, Ebola and yellow fever.
 - For example, in Nigeria it was used effectively to stop Ebola. In India, the system is used to track and stop measles outbreaks. **Hence, statement 2 is correct.**

QUESTION 89:

Which of the following are the natural acid-base indicators?

1. Turmeric
2. Hydrangea
3. Petunia
4. Red cabbage

Select the correct answer using the code given below:

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

Answer: (d)

Explanation

Measuring the Strength of Acids and Bases

- A scale for measuring hydrogen ion concentration in a solution, called 'pH Scale' is used to measure the strength of acids and bases.
- The pH of a neutral solution is 7, values less than 7 on the pH scale represents an acidic solution. As the pH value increases from 7 to 14, it represents an increase in OH^- ion concentration in the solution, that is, increase in the strength of alkali.
- Natural Acid-base indicators:
 - There are many natural materials like red cabbage leaves, Turmeric, coloured petals of some flowers such as Hydrangea, Petunia and Geranium, which indicate the presence of acid or base in a solution. These are called indicators. **Hence, option (d) is correct.**
- Litmus solution is a purple dye, which is extracted from lichen, and is commonly used as an indicator.
- When the litmus solution is neither acidic nor basic, its colour is purple.

QUESTION 90:

Which of the following statements are correct?

1. Sugarcane plants convert sunlight into chemical energy.
2. The decomposition of vegetable matter into compost is an endothermic reaction.
3. Nitrogen gas is used to prevent packaged potato chips from getting oxidised.

Select the correct answer using the code given below:

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

Answer: (c)

Explanation

Sugarcane plants are one of the most efficient converters of sunlight into chemical energy. **Hence, statement 1 is correct.**

- Sugarcane juice can be used to prepare molasses which is fermented to give alcohol (ethanol).
- Some countries now use alcohol as an additive in petrol since it is a cleaner fuel which gives rise to only carbon dioxide and water on burning in sufficient air (oxygen).
- Reactions in which heat is released along with the formation of products are called exothermic chemical reactions.
- The decomposition of vegetable matter into compost is also an example of an exothermic reaction. **Hence, statement 2 is NOT correct.**
- RANCIDITY: When fats and oils are oxidised, they become rancid and their smell and taste change. Usually substances which prevent oxidation (antioxidants) are added to foods containing fats and oil. Keeping food in airtight containers helps to slow down oxidation. Chips manufacturers usually

flush bags of chips with gas such as nitrogen to prevent the chips from getting oxidised. **Hence, statement 3 is correct.**

QUESTION 91:

With reference to the Delimitation Act, 2002, which of the following statements is/are correct?

1. Articles 82 and 170 of the Constitution of India provide for readjustment and the division of each State into territorial constituencies on the basis of the 1971 census.
2. Articles 330 and 332 of the Constitution of India provide for re-fixing the number of seats reserved for the Scheduled Castes and Scheduled Tribes in the House of the People and Legislative Assemblies of the States on the basis of the 2001 census.

Select the correct answer using the code given below:

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

Answer: (b)

Explanation

Delimitation Act, 2002:

- Articles 82 and 170 of the Constitution of India provide for readjustment and the division of each State into territorial constituencies (Parliamentary constituencies and Assembly constituencies) on the basis of the 2001 census by such authority and in such manner as Parliament may, by law, determine. **Hence, statement 1 is NOT correct.**
- Further, Articles 330 and 332 of the Constitution of India provide for re-fixing the number of seats reserved for the Scheduled Castes and Scheduled Tribes in the House of the People and Legislative Assemblies of the States on the basis of the 2001 census. **Hence, statement 2 is correct.**

QUESTION 92:

With reference to money bill, consider the following statements:

1. Though imposition, remission and abolition of any tax is considered to be a part of money bill, regulation of any tax is a part of an ordinary bill.
2. Decision on whether a bill is a money bill or not, is taken by the speaker of the Lok Sabha.
3. When a money bill is presented to the President for his assent, he cannot return it for reconsideration of the house.

Which of the statements given above are correct?

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

Answer: (b)

Explanation

Money Bills

- Article 110 of the Constitution deals with the definition of money bills. It states that a bill is deemed to be a money bill if it contains 'only' provisions dealing with all or any of the following matters:
 - The imposition, abolition, remission, alteration or regulation of any tax. **Hence, statement 1 is**

NOT correct.

- The regulation of the borrowing of money by the Union government.
- If any question arises whether a bill is a money bill or not, the decision of the Speaker of the Lok Sabha is final. His decision in this regard cannot be questioned in any court of law or in either the House of Parliament or even by the President. **Hence, statement 2 is correct.**
- A money bill can only be introduced in the Lok Sabha and that too on the recommendation of the President.
- After a money bill is passed by the Lok Sabha, it is transmitted to the Rajya Sabha for its consideration. The Rajya Sabha has restricted powers with regard to a money bill. It cannot reject or amend a money bill. It can only make the recommendations. It must return the bill to the Lok Sabha within 14 days, with or without recommendations. The Lok Sabha can either accept or reject all or any of the recommendations of the Rajya Sabha.
- If the Rajya Sabha does not return the bill to the Lok Sabha within 14 days, the bill is deemed to have been passed by both Houses in the form originally passed by the Lok Sabha. Finally, when a money bill is presented to the President, he may either give his assent to the bill or withhold his assent to the bill but cannot return the bill for reconsideration of the Houses. Normally, the President gives his assent to a money bill as it is introduced in the Parliament with his prior permission. **Hence, statement 3 is correct.**

QUESTION 93:

Consider the following statements with respect to election of President:

1. Any dispute related to the election of the President in India cannot be challenged in any Court.
2. If the electoral college is incomplete, the rest of the members of the electoral college cannot cast their votes until the electoral college completes its numbers.

Which of the statements given above is/are correct?

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

Answer: (d)

Explanation

All doubts and disputes in connection with the election of the President are inquired into and decided by the Supreme Court whose decision is final. **Hence, statement 1 is NOT correct.**

- The election of a person as President cannot be challenged on the ground that the electoral college was incomplete (i.e., the existence of any vacancy among the members of the electoral college). **Hence, statement 2 is NOT correct.**
- If the election of a person as President is declared void by the Supreme Court, acts done by him before the date of such declaration of the Supreme Court are not invalidated and continue to remain in force.

QUESTION 94:

Consider the following statements:

1. A person who is a member of either of the houses of the Parliament can be appointed as Prime Minister.
2. The Prime Minister holds office during the pleasure of the President.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation

The Constitution does not contain any specific procedure for the selection and appointment of the Prime Minister. Article 75 only says that the Prime Minister shall be appointed by the President.

- In 1997, the Supreme Court held that a person who is not a member of either House of Parliament can be appointed as Prime Minister for six months, within which he should become a member of either House of Parliament; otherwise, he ceases to be the Prime Minister.
- Constitutionally, the Prime Minister may be a member of any of the two Houses of parliament. For example, three Prime Ministers: Indira Gandhi (1966), Deve Gowda (1996) and Manmohan Singh (2004), were members of the Rajya Sabha. In Britain, on the other hand, the Prime Minister should definitely be a member of the Lower House (House of Commons). **Hence, statement 1 is correct.**
- The term of the Prime Minister is not fixed and he holds office during the pleasure of the President. However, this does not mean that the President can dismiss the Prime Minister at any time. So long as the Prime Minister enjoys the majority support in the Lok Sabha, he cannot be dismissed by the President. However, if he loses the confidence of the Lok Sabha, he must resign or the President can dismiss him. **Hence, statement 2 is correct.**

QUESTION 95:

Which of the following statements is/are correct about Panchayats (Extension to Scheduled Areas) Act, 1996?

1. In Scheduled Areas, all seats of Chairpersons of Panchayats at all levels shall be reserved for the Scheduled Tribes.
2. The recommendations of the Gram Sabha or the Panchayats shall be mandatory for grant of prospecting licence or mining lease for minor minerals in the Scheduled Areas.

Select the correct answer using the code given below:

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

Answer: (c)

Explanation

Panchayats (Extension to Scheduled Areas) Act, 1996:

1. A state legislation on the Panchayats in the Scheduled Areas shall be in consonance with the customary laws, social and religious practices and traditional management practices of community resources.
2. Every panchayat at the village level shall be required to obtain from the Gram Sabha a certification of utilisation of funds for their plans programmes and projects.
3. The reservation of seats in the Scheduled Areas in every Panchayat shall be in proportion to the population of the communities for whom reservation is sought to be given under Part IX of the Constitution. However, the reservation for the Scheduled Tribes shall not be less than one-half of the total number of seats. Further, all seats of Chairpersons of panchayats at all levels shall be

reserved for the Scheduled Tribes. **Hence, statement 1 is correct.**

4. Planning and management of minor water bodies in the Scheduled Areas shall be entrusted to Panchayats at the appropriate level.
5. The recommendations of the Gram Sabha or the Panchayats at the appropriate level shall be mandatory for grant of prospecting licence or mining lease for minor minerals in the Scheduled Areas. **Hence, statement 2 is correct.**

QUESTION 96:

Consider the following statements regarding 74th Amendment Act of 1992:

1. The reservation for Women is not less than one-fourth of the total number of seats.
2. The Act provides for a five-year term of office for every municipality.
3. A person can only be a member of a municipality if he has attained the age of 25 years.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

The salient features of 74th Amendment Act of 1992:

- **Reservation of Seats:** The act provides for the reservation of seats for the scheduled castes and the scheduled tribes in every municipality in proportion of their population to the total population in the municipal area. Further, it provides for the reservation of not less than one-third of the total number of seats for women (including the number of seats reserved for women belonging to the SCs and the STs). **Hence, statement 1 is NOT correct.**
- **Duration of Municipalities:** The act provides for a five- year term of office for every municipality. However, it can be dissolved before the completion of its term. Further, the fresh elections to constitute a municipality shall be completed
 - a. before the expiry of its duration of five years; or
 - b. in case of dissolution, before the expiry of a period of six months from the date of its dissolution.**Hence, statement 2 is correct.**
- **Disqualifications:** No person shall be disqualified on the ground that he is less than 25 years of age if he has attained the age of 21 years. **Hence, statement 3 is NOT correct.**

QUESTION 97:

Regarding Permanent Lok Adalats, consider the following statements:

1. Permanent Lok Adalats are established to deal with cases pertaining to the public utility services.
2. The Permanent Lok Adalat shall have jurisdiction in respect of any matter relating to an offence not compoundable under any law.
3. If both the parties to the dispute fail to reach an agreement, the Permanent Lok Adalat shall decide the dispute on merits.

Which of the statements given above are correct?

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

(d) 1, 2 and 3

Answer: (c)

Explanation

The Legal Services Authorities Act, 1987 was amended in 2002 to provide for the establishment of the Permanent Lok Adalats to deal with cases pertaining to the public utility services. **Hence, statement 1 is correct.**

The salient features of the new institution of Permanent Lok Adalats are as follows:

1. The Permanent Lok Adalat shall consist of a Chairman who is or has been a district judge or additional district judge or has held judicial office higher in rank than that of the district judge and two other persons having adequate experience in public utility services.
2. The pecuniary jurisdiction of the Permanent Lok Adalat shall be up to rupees ten lakhs. However, the Central Government may increase the said pecuniary jurisdiction from time to time.
3. The Permanent Lok Adalat shall have not jurisdiction in respect of any matter relating to an offence not compoundable under any law. **Hence, statement 2 is NOT correct.**
4. Before the dispute is brought before any court, any party to the dispute may make an application to the Permanent Lok Adalat for settlement of the dispute. After an application is made to the Permanent Lok Adalat, no party to that application shall invoke jurisdiction of any court in the same dispute.
5. In case the parties reach an agreement, the Permanent Lok Adalat shall pass an award in terms thereof. In case parties to the dispute fail to reach an agreement, the Permanent Lok Adalat shall decide the dispute on the merits. **Hence, statement 3 is correct.**

QUESTION 98:

Consider the following statements:

1. The President of India can address his resignation letter to either Vice-President or Chief Justice of India.
2. Charges to impeach the President of India must be signed by one-third members of either of the House.
3. All the members who participate in the election of the President also participate in the impeachment proceedings.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) 3 only
- (d) None of the above

Answer: (d)

Explanation

Term of President's Office:

- The President holds office for a term of five years from the date on which he enters upon his office.
- However, he can resign from his office at any time by addressing the resignation letter to the Vice-President. Further, he can also be removed from the office before completion of his term by the process of impeachment. **Hence, statement 1 is NOT correct.**

Impeachment of President:

- The President can be removed from office by a process of impeachment on the ground of 'violation

of the Constitution’.

- The impeachment charges can be initiated by either House of Parliament. These charges should be signed by one-fourth members of the House (that framed the charges), and a 14 days’ notice should be given to the President. **Hence, statement 2 is NOT correct.**
- After the impeachment resolution is passed by a majority of two-thirds of the total membership of that House, it is sent to the other House, which should investigate the charges.
- The President has the right to appear and to be represented during such investigation. If the other House also sustains the charges and passes the impeachment resolution by a majority of two-thirds of the total membership, then the President stands removed from his office from the date on which the resolution is passed.
- Thus, an impeachment is a quasi-judicial procedure in the Parliament. In this context, two things should be noted:
 - The nominated members of either House of Parliament can participate in the impeachment of the President though they do not participate in his election.
 - The elected members of the legislative assemblies of states and the Union Territories of Delhi and Puducherry do not participate in the impeachment of the President though they participate in his election. **Hence, statement 3 is NOT correct.**

QUESTION 99:

Consider the following statements:

1. Both the cabinet ministers and the non-cabinet ministers can be the members of the cabinet committees.
2. Home minister can also act as a chairman of the cabinet committees.
3. Cabinet committees are constituted under the Transaction of Business Rules, 1961.

Which of the statements given above are correct?

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

Answer: (d)

Explanation

Features of Cabinet Committees:

- They are extra-constitutional. In other words, they are not mentioned in the Constitution. However, the Rules of Business provide for their establishment.
- They are of two types – standing and ad hoc. The former are of a permanent nature while the latter are of a temporary nature. The ad hoc committees are constituted from time to time to deal with special problems. They are disbanded after their task is completed.
- Their membership varies from three to eight. They usually include only Cabinet Ministers. However, the non-cabinet Ministers are not debarred from their membership. **Hence, statement 1 is correct.**
- They not only include the Ministers in charge of subjects covered by them but also include other senior Ministers.
- They are mostly headed by the Prime Minister. Sometimes other Cabinet Ministers, particularly the Home Minister or the Finance Minister, also act as their Chairman. But, in case the Prime Minister is a member of a committee, he invariably presides over it. **Hence, statement 2 is correct.**

Under the Transaction of Business Rules, the Government constitutes Cabinet Committees. The executive works under the Government of India Transaction of Business Rules, 1961. These Rules emerge out of



Article 77(3) of the Constitution, which states: “The President shall make rules for more convenient transaction of the business of the Government of India, and for the allocation among Ministers of the said business.” **Hence, statement 3 is correct.**

QUESTION 100:

Consider the following provisions of 91st Constitutional Amendment Act of 2003:

1. The Council of Ministers shall not exceed 15 per cent of the total strength of the Lok Sabha excluding the Prime Minister.
2. The number of ministers, including the Chief Minister, in a state shall not be less than 12.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

Provisions:

The 91st Amendment Act of 2003 has made the following provisions to limit the size of Council of Ministers, to debar defectors from holding public offices, and to strengthen the anti-defection law:

1. The total number of ministers, including the Prime Minister, in the Union Council of Ministers shall not exceed 15 percent of the total strength of the Lok Sabha (Article 75). **Hence, statement 1 is NOT correct.**
2. A member of either House of Parliament belonging to any political party who is disqualified on the ground of defection shall also be disqualified to be appointed as a minister.
3. The total number of ministers, including the Chief Minister, in the Council of Ministers in a state shall not exceed 15 percent of the total strength of the Legislative Assembly of that state. But, the number of ministers, including the Chief Minister, in a state shall not be less than 12. **Hence, statement 2 is correct.**
4. A member of either House of a state legislature belonging to any political party who is disqualified on the ground of defection shall also be disqualified to be appointed as a minister.