

Prelims Refresher Programme: Day 17-Test 5

QUESTION 1:

Consider the following statements:

1. The death of migratory birds at the Sambhar Lake occurred due to avian botulism.
2. Avian botulism is caused by a virus that affects nerves.
3. The Sambhar Lake has been designated as a Ramsar site.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation

- **Avian botulism** is the cause of the death of domestic and migratory birds in the Sambhar Lake. **Hence, statement 1 is correct.**
- The disease is caused by a neurotoxic protein produced by a bacteria called *Clostridium botulinum*, it affects nerves. **Hence, statement 2 is not correct.**
- The **Sambhar Salt Lake** is India's largest inland saltwater body located near Jaipur in Rajasthan. Sambhar has been designated as a **Ramsar site** (recognized wetland of international importance) because the wetland is a key wintering area for tens of thousands of flamingos and other birds that migrate from northern Asia. **Hence, statement 3 is correct.**

QUESTION 2:

With reference to the 'Central Drugs Standard Control Organization', consider the following statements:

1. It is a body under the Ministry of Chemicals and Fertilizers.
2. It has regulatory control over the import of drugs.

Which of the statements given above are correct?

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

Answer: (b)

Explanation

- The Central Drugs Standard Control Organization (CDSCO) is the national regulatory body for Indian pharmaceuticals and medical devices under the **Ministry of Health & Family Welfare**. **Hence, statement 1 is not correct.**
- The CDSCO is the central drug authority for discharging functions assigned to the Central Government under the Drugs and Cosmetics Act.
- Major functions of CDSCO include:
 - **Regulatory control over the import of drugs**, approval of new drugs and clinical trials, meetings of Drugs Consultative Committee (DCC) and Drugs Technical Advisory Board (DTAB), approval of certain licenses as Central License Approving Authority is exercised by the CDSCO headquarters. **Hence, statement 2 is correct.**

QUESTION 3:

Consider the following statements:

1. India has the highest number of multidrug-resistant TB (MDR-TB) cases in the world.
2. MDR-TB cannot be cured by first-line drugs.

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

- According to the Annual India TB Report 2019, **India has the highest multi-drug resistant TB cases.** Over 21.5 million tuberculosis (TB) cases were recorded in 2018, which is 17 per cent higher than the year before. **Hence, statement 1 is correct.**
- Multidrug-resistant tuberculosis (MDR-TB) is a form of TB caused by bacteria that **do not respond to first-line anti-TB drugs.** MDR-TB is treatable and curable by using second-line drugs. **Hence, statement 2 is correct.**

QUESTION 4:

With reference to 'Neem Coated Urea', consider the following statements :

1. It slows down the process of nitrification of urea.
2. It prevents the leaching of nitrogen.
3. It can check the diversion of urea for industrial uses.

Which of the statements given above is/are correct?

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

Answer: (d)

Explanation

- Only about 30 to 40 percent of N_2 in the Urea is utilized by the plants. Coating of neem oil helps in the **gradual release of nitrates into the soil** and gives crops more time to absorb the nutrients. **Hence, statement 1 is correct.**
- The Union Government in 2015 has made it mandatory for all indigenous producers of urea to produce 75 percent of subsidized urea as Neem coated urea.
- The benefits of applying Neem coated urea are:
 - It **prevents leaching of nitrogen** into the soil thus preventing it from damaging. **Hence, statement 2 is correct.**
 - It leads to a lessening of contamination of ground-water due to leaching of urea.
 - As the production of neem coated urea requires the collection of neem seeds, it can generate employment opportunities in rural areas.
 - Application of Neem coated urea **can check the diversion of urea** for industrial uses. **Hence, statement 3 is correct.**

QUESTION 5:

With reference to 'K2-18b', consider the following statements:

1. It is a natural satellite of Saturn.
2. The traces of water vapour have been found in its atmosphere.
3. It lies in the Goldilocks zone.

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: (c)

Explanation

- K2-18b is the **only planet orbiting a star outside the Solar System** (exoplanet) that is known to have both water and temperatures that could support life. **Hence, statement 1 is not correct.**
- Scientists have **found traces of water vapour** in the atmosphere of K2-18b. Its size and surface gravity are much larger than Earth's. **Hence, statement 2 is correct.**
- K2-18b orbits the **cool dwarf star K2-18**, which is about 110 light-years from Earth in the Leo constellation.
- It resides in a **habitable zone or Goldilocks zone**, the area around a star where it is not too hot and not too cold for liquid water to exist on the surface of surrounding planets. **Hence, statement 3 is correct.**

QUESTION 6:

With reference to 'Ocean Warming', consider the following statements:

1. Rising temperatures cause coral bleaching.
2. It leads to deoxygenation of the ocean.
3. It increases the spread of diseases in marine species.

Which of the statements given above is/are correct?

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

Answer: (d)

Explanation

- Increasing ocean temperatures affect marine species and ecosystems. Rising temperatures **cause coral bleaching** and the **loss of breeding grounds for marine fish** and mammals. **Hence, statement 1 is correct.**
- **Ocean warming leads to deoxygenation** – a reduction in the amount of oxygen dissolved in the ocean – and sea-level rise – resulting from the thermal expansion of seawater and continental ice melting. The rising temperatures, coupled with ocean acidification (the decrease in pH of the ocean due to its uptake of CO₂), affect marine species and ecosystems and, consequently, the fundamental benefits humans derive from the ocean. **Hence, statement 2 is correct.**
- Warming ocean temperatures are **linked to the increase and spread of diseases in marine species**. Humans risk direct transmission of these diseases when consuming marine species, or from infections of wounds exposed in marine environments. **Hence, statement 3 is correct.**

QUESTION 7:

With reference to Indian agriculture and agro-processing sector, which of the following statements is/are correct?

1. Contribution of cultivation and animal husbandry in the total average monthly income of the agri-households is below 50%.
2. Creation of irrigation infrastructure is one of the aspects of the efforts to double the income of the farmers by 2022.
3. FDI up to 100%, under the automatic route, is allowed in food processing industries.

Select the correct answer using the code given below:

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

Answer: (d)

Explanation

- NABARD All India Rural Financial Inclusion Survey (NAFIS), 2016-17 shows that while **cultivation** is a major source of income (35%), followed by daily **wage labourer** (34%), **livestock rearing** contributes only 8% of their income.
- The survey shows that **41% of rural households are indebted**, of which the majority (43%) are agricultural households.
 - NAFIS is a national level survey that offers a comprehensive overview of the rural population in terms of their status of livelihoods and level of financial inclusion. **Hence, statement 1 is correct.**
- The Government has set a target of doubling farmers' income by the year 2022. The government intends to address issues of optimal **utilization of water resources**, **create new infrastructure for irrigation**, conserve soil fertility with balanced use of fertilizer and provide connectivity from farm to market. **Hence, statement 2 is correct.**
- Measures adopted by the Indian Government:
 - **Pradhan Mantri Krishi Sinchai Yojana, Soil health card, and Prampragat Krishi Vikas Yojana**-Aiming to raise output and reduce cost.
 - **Pradhan Mantri Fasal Bima Yojana**-To provide insurance against crop and income loss and to encourage investment in farming.
 - **Interlinking of rivers** – To raise output and farm incomes.
 - **'Operation Greens'** to address price volatility of perishable commodities like Tomato, Onion and Potato (TOP).
 - PM Kisan **Sampada Yojana** to promote food processing in a holistic manner.
- **Foreign Direct Investment (FDI) policy**: FDI up to 100%, under the automatic route is allowed in food processing industries. **Hence, statement 3 is correct.**

QUESTION 8:

Consider the following statements with reference to the Agricultural and Processed Food Products Export Development Authority (APEDA):

1. It is a statutory body.
2. It functions under the Ministry of Agriculture & Farmers' Welfare.

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 Agricultural and Processed Food Products Export Development Authority (APEDA) was established by the Government of India under the **Agricultural and Processed Food Products Export Development Authority Act, 1985**. It is a **statutory** body. **Hence, statement 1 is correct.**
- It functions under the **Ministry of Commerce and Industry**. The Authority has its headquarters in New Delhi. **Hence, statement 2 is not correct.**

Functions of APEDA

- **Export promotion and development of the scheduled products** viz. fruits, vegetables, meat, poultry; dairy products; confectionery; honey, jaggery and sugar products; alcoholic and non-alcoholic beverages; cereal and cereal products; groundnuts, peanuts and walnuts, pickles, papads and herbal and medicinal plants.
- **Monitoring the import of sugar.**
- Development of industries relating to the scheduled products for export by way of providing **financial assistance** and undertaking surveys and feasibility studies.
- Fixing of standards and specifications for the scheduled products for the purpose of exports.
- **Inspection of meat and meat products in slaughterhouses, processing plants** and storage premises.

QUESTION 9:

Which of the following is/are included in the National Family Health Survey (NFHS-4)?

1. Maternal and child health
2. Domestic violence
3. HIV knowledge
4. Infant and child mortality

Select the correct answer using the code given below:

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

Answer: (d)

Explanation

- **National Family Health Survey (NFHS-4)**-provides updates and evidence of trends in key population, health and nutrition indicators, including HIV prevalence. Moreover, the survey has covered a range of health-related issues, including fertility, **infant and child mortality, maternal and child health**, perinatal mortality, adolescent reproductive health, high-risk sexual behaviour, safe injections, tuberculosis, and malaria, non-communicable diseases, **domestic violence, HIV knowledge**, and attitudes toward people living with HIV.
- The information will enable the government to provide national and international agencies to monitor and evaluate policies and programmes related to population, health, nutrition, and HIV/AIDS. **Hence, option D is correct.**

QUESTION 10:

With reference to 'Poppy Latex', consider the following statements:

1. It is regulated by the Central Bureau of Narcotics through licensing.
2. The cultivation of the poppy plant is indigenous to India.
3. It is used in the pharmaceutical industry.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

- India's heavily regulated **poppy economy** – the milky white fluid from seeds, called latex, is the mainstay of illegal drugs trade around the world. Poppy cultivation, much like poppy seed imports, is heavily restricted in India. The **Central Bureau of Narcotics (CBN)** gives licences to a few farmers (about 25,000 to 30,000 farmers) every year to grow the crop. **Hence, statement 1 is correct.**
- The poppy plant is **not indigenous to India**. It was imported from abroad. **Papaver somniferum** is originally a **native of the warmer parts of western Asia** from where it was taken to Greece. From Asia Minor, the Arab traders took it to the Far Eastern countries, including India and China. **Hence, statement 2 is not correct.**
- The latex collected is transported to opium factories at **Ghazipur and Neemuch** to derive alkaloids such as **morphine, papaverine, codeine and noscapine** – **all used in modern medicine**. Poppy seeds are also used for cooking. **Hence, statement 3 is correct.**

QUESTION 11:

With reference to the 'antibiotic Colistin', consider the following statements:

1. The World Health Organisation (WHO) has categorised Colistin as a "reserve" antibiotic.
2. Its use in poultry and animal-feed supplement has not been banned yet in India.
3. The Drugs and Cosmetics Act, 1940 deals with regulation of Colistin.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

- Colistin is being used as an antibiotic of last resort for treatment of patients suffering from infections caused by drug-resistant bacteria. It is used for therapeutic purposes in the veterinary sector.
- According to the World Health Organisation (WHO), **Colistin is a "reserve" antibiotic**, which means it is supposed to be considered a "last-resort" option in treatment and used only in the most severe circumstances, when all other alternatives have failed, such as for life-threatening infections due to multidrug-resistant bacteria. **Hence, statement 1 is correct.**
- In July 2019, **the Health Ministry banned** the manufacture, sale and distribution of antibiotic, Colistin and its formulations for food producing animals, poultry, aqua farming and animal feed supplements in a bid to preserve the drug's efficacy in humans. **Hence, statement 2 is not correct.**

- The government has banned the antibiotic Colistin in exercise of powers conferred by **section 26A of the Drugs and Cosmetics Act, 1940**. It confers powers to the Central Government to prohibit manufacture, sale and distribution of drugs and cosmetics in public interest. **Hence, statement 3 is correct.**

QUESTION 12:

Which of the following is/are used as artificial preservatives?

1. Nitrates
2. Sulphites
3. Benzoate
4. Artificial antioxidants

Select the correct answer using the code given below:

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

Answer: (d)

Explanation

- **Nitrates** are salts of nitrous acid, the most commonly used nitrate being sodium nitrate which is **added to meat and smoked fish** where it helps prevent the growth of bacteria such as clostridium botulinum-the bacterium responsible for botulism. Another benefit attributed to sodium nitrate is due to the fact that it interacts with the myoglobin in meat which helps to give the meat a more appealing dark red appearance.
- **Sulphites** have a long history in food preservation as they occur naturally in most wines. Today the antioxidant, antimicrobial properties of sulphites serve a variety of functions in food preservation which help to **preserve aspects of food such as taste and colour** e.g. preserving the pink colour of meat and fish.
- **Benzoates** are compounds based on benzoic acid, they are most frequently used in the preservation of soft drinks such as **carbonated drinks and squashes**, but are also found in products such as pickles, flour, toothpaste and medicines.
 - The most commonly used benzoate is potassium benzoate – the potassium salt of benzoic acid, which inhibits the growth of mould, yeast and bacteria. Sodium benzoate is also very widely used as a food preservative in the preservation of fruit juices, pickles, salads, margarine, jams and jellies
- **Artificial antioxidants** – It helps to prevent food spoilage by slowing down the reaction of food with oxygen in the atmosphere. Artificial antioxidants include butylated hydroxytoluene (BHT) and butylated hydroxyanisole (BHA) which are used in bakery products, fats and oils. **Hence, option D is correct.**

QUESTION 13:

With reference to 'Corporate Social Responsibility (CSR)', consider the following statements:

1. All companies are required to spend 2% of their average profit for the last three years.
2. Failure to file annual returns may attract criminal proceedings.
3. There is a provision of imprisonment in case of any violation of the CSR provisions.

Which of the statements given above is/are correct?

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

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

Answer: (b)

Explanation

- The Act mandates that companies with a **profit of more than Rupees 5 crore, turnover of Rupees 1000 crore, and net worth of more than INR 500 crore** have to spend at least 2% of their three years' annual average net profit towards CSR activities. **Hence, statement 1 is not correct**
- The Companies Amendment Act, 2019 has brought about 16 corporate offences under the ambit of civil liability, including **failure to file annual returns** and financial statements both within a specified time frame, and issuance of shares at a discount. These offences, which earlier attracted criminal proceedings against the offender, are **now liable for a penalty**. **Hence, statement 2 is not correct**
- In case of any violation of the CSR provisions, the company is liable to a minimum penalty fee of Rupees 50,000, which may extend to Rupees 25 lakh. Further, every **defaulting officer of the company may be liable to imprisonment** for up to three years, or a fine up to Rupees 5 lakh or both. **Hence, statement 3 is correct.**

QUESTION 14:

With reference to the 'Transgender Persons (Protection of Rights) Bill, 2019', consider the following statements:

1. It amends Section 377 of the IPC and decriminalises homosexuality
2. It provides for the National Council for Transgender persons (NCT) to be chaired by the Union Minister of Law and Justice.

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 **Transgender Persons (Protection of Rights) Bill, 2019** defines a transgender person as one whose gender does not match the gender assigned at birth. It includes trans-men and trans-women, persons with intersex variations, gender-queers, and persons with socio-cultural identities, such as kinnar and hijra. The bill has following provisions:
 - Non-discrimination against a Transgender Person in educational institutions, employment, healthcare services etc.
 - Recognition of identity of Transgender Persons and to confer upon them right to self perceived gender identity.
 - Provision of right of residence with parents and immediate family members.
 - Provision for formulation of welfare schemes and programmes for education, social security and health of Transgender Persons.
 - Provision for **National Council for Transgender (NCT)** to advise, monitor and evaluate measures for the protection of their rights.
- The Bill directs the Central government to constitute a NCT headed by the **Union Minister of Social Justice and Empowerment**.
 - The NCT will advise the central government as well as monitor the impact of policies, legislation and projects with respect to transgender persons. It will also redress the grievances of transgender persons. **Hence, statement 2 is not correct.**

- In 2018, the **Supreme Court of India decriminalised homosexuality** by declaring Section 377 of the Indian Penal Code (IPC) unconstitutional in respect of consensual homosexual sex between adults. **Hence, statement 1 is not correct.**

QUESTION 15:

Consider the following statements:

1. The mobile application, “Janaushadhi Sugam” has been launched by the Ministry of Health and Family Welfare.
2. The app will augment the vision of the government to provide affordable healthcare through the Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) Kendras.
3. The PMBJP medicines are procured only from World Health Organisation-Good manufacturing practice (WHO-GMP) certified manufacturers.

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: (c)

Explanation

- The Ministry of Chemicals and Fertilizers has launched a mobile application called “Janaushadhi Sugam”, which will help people locate nearby Janaushadhi Kendras. **Hence, statement 1 is not correct.**
- The app will augment the vision of the government to provide affordable healthcare to all Indians through the **Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP)** Kendras across the country and this had already led to substantial savings to poor on medicines. **Hence, statement 2 is correct.**
- The PMBJP medicines are procured only from the **World Health Organisation-Good Manufacturing Practice (WHO-GMP)** certified manufacturers and each batch is tested at National Accreditation Board for Testing and Calibration Laboratories (NABL) accredited independent labs. **Hence, statement 3 is correct.**

QUESTION 16:

With reference to the project ‘Tech Saksham’, which of the following statements is/are correct?

1. It is a joint project of the Ministry of Micro, Small and Medium Enterprises (MSME) and Confederation of Indian Industry (CII).
2. It is launched to accelerate the growth of Startups through technology enablement.

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

- The Ministry of **Micro, Small and Medium Enterprises (MSME)** has launched a project named ‘**Tech Saksham**’. It is a Ministry of **MSME and Confederation of Indian Industry (CII)** partnered project which brings together technology majors Dell Technologies India, HP India, etc to address technological gaps faced by MSMEs in their growth. **Hence, statement 1 is correct.**

- Tech Saksham project is launched to accelerate MSME growth through technology enablement. Its vision is to bridge the gap in technology adoption for MSMEs so as to provide an impetus for them to be competitive on a global scale, increase their contribution to country exports and leverage cost efficiencies. **Hence, statement 2 is correct.**

QUESTION 17:

Among the following Presidents of India, who was also the Secretary General of the Non-Aligned Movement for some period? (2009)

- (a) Dr. Sarvepalli Radhakrishnan
- (b) Varahagiri Venkata Giri
- (c) Giani Zail Singh
- (d) Dr. Shanker Dayal Sharma

Answer: (c)

Explanation

- The **Non-Aligned Movement (NAM)** was created and founded by the developing countries **during the collapse of the colonial system** and the independence struggles of the people of **Africa, Asia, Latin America and other regions of the world** and at the height of the Cold War.
- Some of the decolonized countries decided to stay away from joining any of the two major power poles that developed post-Second World War during the Cold War era.
- The final resolution of the **Bandung Conference of 1955** laid the foundation for the Non-Aligned Movement (NAM).
- **Giani Zail Singh** served as the **Chairperson of NAM** from 1983-86. He was the second Indian to chair the NAM after Neelam Sanjeeva Reddy, who chaired the NAM during 1983. **Hence, C is the correct option.**

QUESTION 18:

He wrote biographies of **Mazzini, Garibaldi, Shivaji and Shrikrishna**; stayed in America for some time; and was also elected to the Central Assembly. He was: (2018)

- (a) Aurobindo Ghosh
- (b) Bipin Chandra Pal
- (c) Lala Lajpat Rai
- (d) Motilal Nehru

Answer: (c)

Explanation

- **Lala Lajpat Rai founded the Indian Home Rule League in New York, America in 1917.** In the USA, he worked to get moral support for the Indian independence movement from the international community.
- He was elected **deputy leader of the Central Legislative Assembly in 1926.** He was also called '**Punjab Kesari**'. Along with Bipin Chandra Pal and Bal Gangadhar Tilak, he formed the Lal-Bal-Pal trio.
- Books by Lala Lajpat Rai – The Story of My Deportation (1908), Arya Samaj (1915), The United States of America: A Hindu's Impression (1916), England's Debt to India: A Historical Narrative of Britain's Fiscal Policy in India (1917), Unhappy India (1928), Young India: An Interpretation, and **a series of popular biographies on Mazzini, Garibaldi, Swami Dayanand and Shivaji. 'Yogiraj Shrikrishna'** is another book written by him on the life and teachings of Lord Krishna. **Hence, option C is correct.**

QUESTION 19:

Mahatma Gandhi said that some of his deepest convictions were reflected in a book titled, “Unto this Last” and the book transformed his life. What was the message from the book that transformed Mahatma Gandhi? (2011)

- (a) Uplifting the oppressed and poor is the moral responsibility of an educated man.
- (b) The good of an individual is contained in the good of all.
- (c) The life of celibacy and spiritual pursuit are essential for a noble life.
- (d) All the statements (a), (b) and (c) are correct in this context.

Answer: (b)

Explanation

- **The book, “Unto this Last” by John Ruskin had a profound impact on Gandhi.**
- This book was offered to Gandhi by his friend Mr. Polak and Gandhi read it on his train journey from Johannesburg to Durban. Gandhi derived following three messages from it:
 - **The good of the individual is contained in the good of all.** The philosophy of Sarvodaya and Antyodaya were products of this.
 - **A life of labour is the life worth living**
 - **All have the same right of earning their livelihood from their work. Hence, option B is correct.**

QUESTION 20:

Which of the following is/are the example(s) of chemical change? (2014)

1. Crystallization of Sodium Chloride
2. Melting of ice
3. Souring of milk

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 3 only
- (c) 1, 2 and 3
- (d) None

Answer: (b)

Explanation

- Chemical change results from a chemical reaction, while a physical change is when matter form changes but not its chemical identity. Examples of chemical change include burning, cooking, rusting, rotting, etc. Examples of physical change include boiling, melting, freezing, etc.
- Crystallization of Sodium Chloride and melting of ice are physical changes. **Hence, 1 and 2 are not correct.**
- Souring of milk is an example of chemical change as it occurs due to bacterial fermentation. **Hence, 3 is correct. Hence, option B is correct.**

QUESTION 21:

With reference to ‘the structure of the atmosphere’, consider the following statements:

1. Nearly all the earth’s weather conditions occur in troposphere
2. Tropopause over poles is warmer than over the equator.
3. The ozone layer in the Stratosphere reduces the temperature by absorbing ultraviolet rays from the sun.

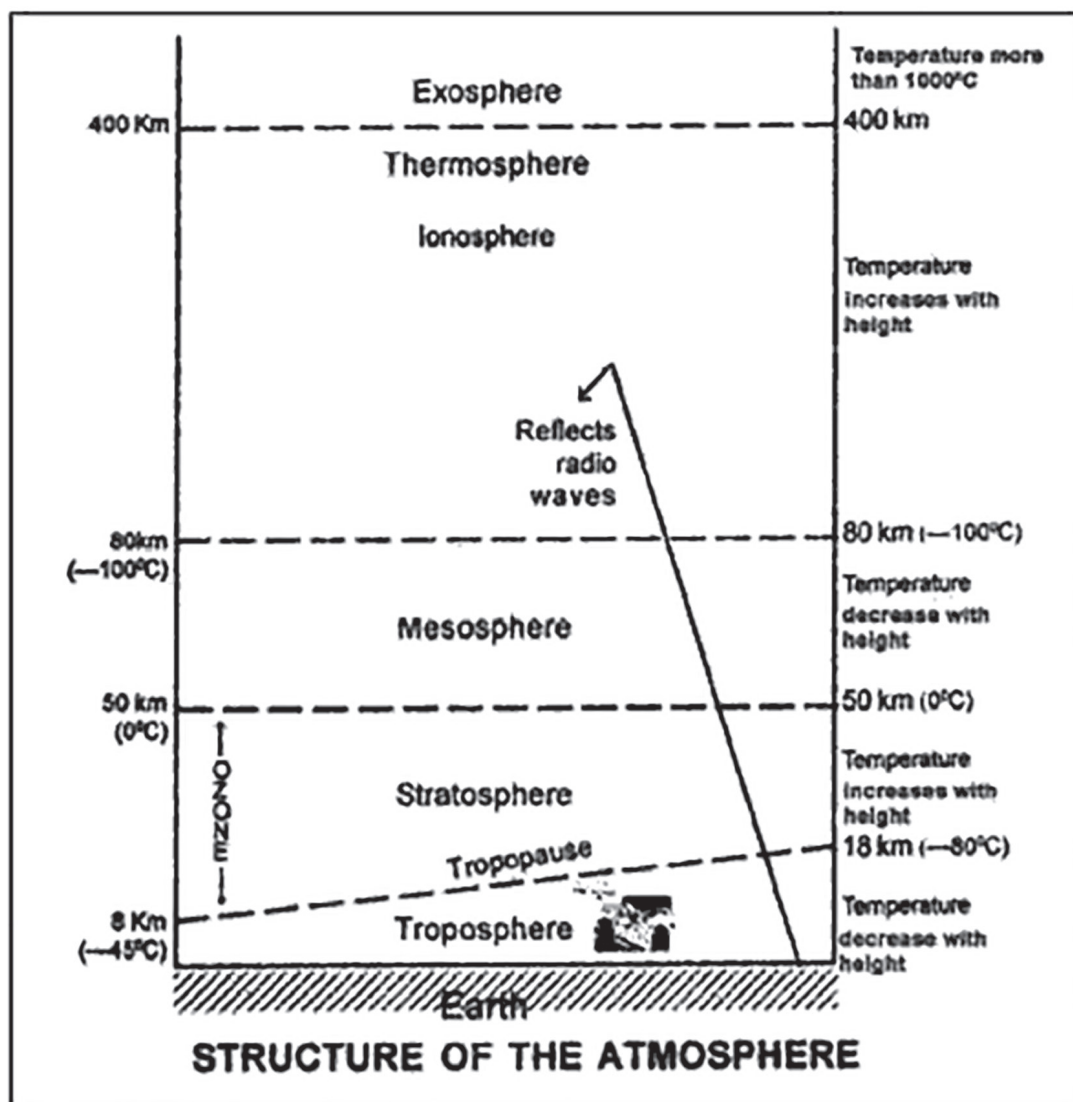
Select the correct answer using the code given below:

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

Answer: (c)

Explanation

- The troposphere, the lowermost layer of the atmosphere, is the most important zone for organisms and is composed mainly of Nitrogen and Oxygen. It also contains Argon and Carbon Dioxide and traces of Helium, Neon, Krypton, Hydrogen etc.
 - The troposphere contains more than 75% of the contents of the earth's atmosphere. This layer contains dust particles and water vapour. **Nearly all the earth's weather conditions** including most clouds, rain, and snow occur in this layer. **Hence, statement 1 is correct.**



- The tropopause lies about 8 kilometres over the North and South poles and about 18 kilometres over the equator, and its height varies with season.
 - The coldest part of the troposphere is at the tropopause over the equator. There, the **air has risen so high that its temperature drops as low as -80°C** . The tropopause **over the poles** can be as much as 30°C warmer than over the equator. **Hence, statement 2 is correct**

- The Stratosphere contains the Ozone layer that absorbs the ultraviolet rays from the sun and heats the surrounding thereby increasing the temperature.
 - Due to this, the temperature of the lower layer is about -55 °C and of the upper layer increases to about -2 °C at the top of the stratosphere. **Hence, statement 3 is not correct**

QUESTION 22:

Regarding the composition of the atmosphere, consider the following statements:

1. Water vapour decreases from the equator towards the poles.
2. Concentration of dust particles is higher in temperature in comparison to equatorial regions.

Select the correct answer using the code given below:

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

Answer: (c)

Explanation

- The atmosphere is composed of gases, water vapour and dust particles.
- Water holding capacity, also called absolute humidity decreases with the temperature. Thus, **lower temperatures would mean lower capacity to hold the water vapour.**
 - So, the water vapour decreases from the equator towards the poles. In the warm and wet tropics, it may account for 4% of the air by volume, while in the dry and cold areas of desert and polar regions, it may be less than 1% of the air **Hence, statement 1 is correct**
- The atmosphere has sufficient capacity to keep small solid particles, which may originate from different sources and include sea salts, fine soil, smoke-soot, ash, pollen, dust and disintegrated particles of meteors.
 - The higher concentration of dust particles is found in subtropical and temperate regions **due to the prevalence of dry winds** in comparison to equatorial and polar regions. Dust and salt particles act as hygroscopic nuclei around which water vapour condenses to produce clouds. **Hence, statement 2 is correct.**

QUESTION 23:

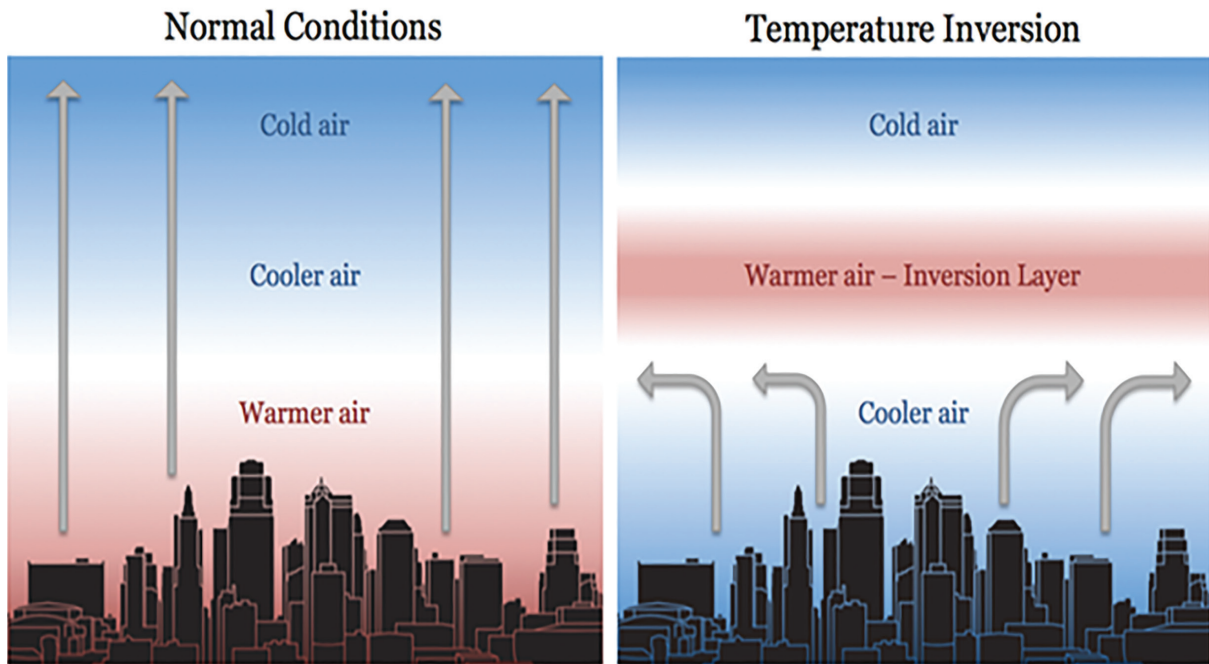
Which one of the following is **not correct** about the inversion of temperature in the atmosphere?

- (a) It causes the inversion of normal lapse rate.
- (b) A long winter night with clear skies and still air is an ideal situation for temperature inversion.
- (c) It promotes instability in the lower layers of the atmosphere.
- (d) A temperature inversion in hills and mountains is due to air drainage.

Answer: (c)

Explanation

- Normally, temperature decreases with increase in elevation. It is called the normal lapse rate. At times, the situation is reversed and **the normal lapse rate is inverted. It is called Inversion of temperature. Hence, statement A is correct.**



- **Ideal conditions** for the temperature inversion to take place:
 - **A long winter night with clear skies** and still air is an ideal situation for inversion. The heat of the day is radiated off during the night, and by early morning hours, the earth is cooler than the air above. **Hence, statement B is correct**
 - **Calm and stable air** so that there is no vertical mixing at lower levels.
- Inversion of temperature in the lower layers of the atmosphere creates a condition whereby the **air in contact with the ground becomes cool and dense, and the above layer** remains warm and light. This promotes stability in the lower level of the atmosphere. **Hence, statement C is not correct**
- Cold air at the hills and mountains, produced during the night, flows under the influence of gravity. Being heavy and dense, the cold air acts almost like water and moves down the slope to pile up deeply in pockets and valley bottoms with warm air above. This is called air drainage. **Hence, statement D is correct.**

QUESTION 24:

Which of the following is/are different ways of heating and cooling the atmosphere?

1. Conduction
2. Convection
3. Radiation
4. Advection

Which of the statements given above is/are correct?

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

Answer: (d)

Explanation

- Conduction takes place when two bodies of unequal temperature are in contact with one another, there is a flow of energy from the warmer to a cooler body. The transfer of heat continues until both

the bodies attain the same temperature or the contact is broken. Conduction is important in heating the lower layers of the atmosphere.

- The earth after being heated by insolation transmits the heat to the atmospheric layers nearer to the earth in long waveforms. **The air in contact with the land gets heated** slowly and the upper layers in contact with the lower layers also get heated.
- The air in contact with the earth rises vertically on **heating in the form of currents** and further transmits the heat of the atmosphere. This process of vertical heating of the atmosphere is known as convection. However, the convective transfer of energy is confined only to the troposphere.
- Heating of the atmosphere takes place through both short and longwave radiation.
 - The atmosphere receives energy through incoming solar radiation (insolation). Within the troposphere **water vapour, ozone and other gases absorb much of the near infrared radiation**.
 - The earth after being heated itself becomes a radiating body and it radiates energy to the atmosphere in long wave form. This energy heats up the atmosphere from below. This process is known as terrestrial radiation.
 - The long wave radiation is absorbed by the atmospheric gases particularly by carbon dioxide and the other greenhouse gases. Thus, the atmosphere is indirectly heated by the earth's radiation.
- The transfer of heat through horizontal movement of air is called advection. Horizontal movement of the air is relatively more important than the vertical movement.
 - In middle latitudes, most diurnal (day and night) variations in daily weather are caused by advection alone. In tropical regions particularly in northern India during summer season local winds called 'loo' is the outcome of the advection process.
- **Thus, all the given ways account for the heating and cooling of the atmosphere. Hence, option D is correct.**

QUESTION 25:

With reference to the Coriolis force, consider the following statements:

1. It deflects the wind to the right direction in the northern hemisphere and to the left in the southern.
2. At the equator, the Coriolis force is maximum and decreases polewards.

Which of the statements given above is/are correct?

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

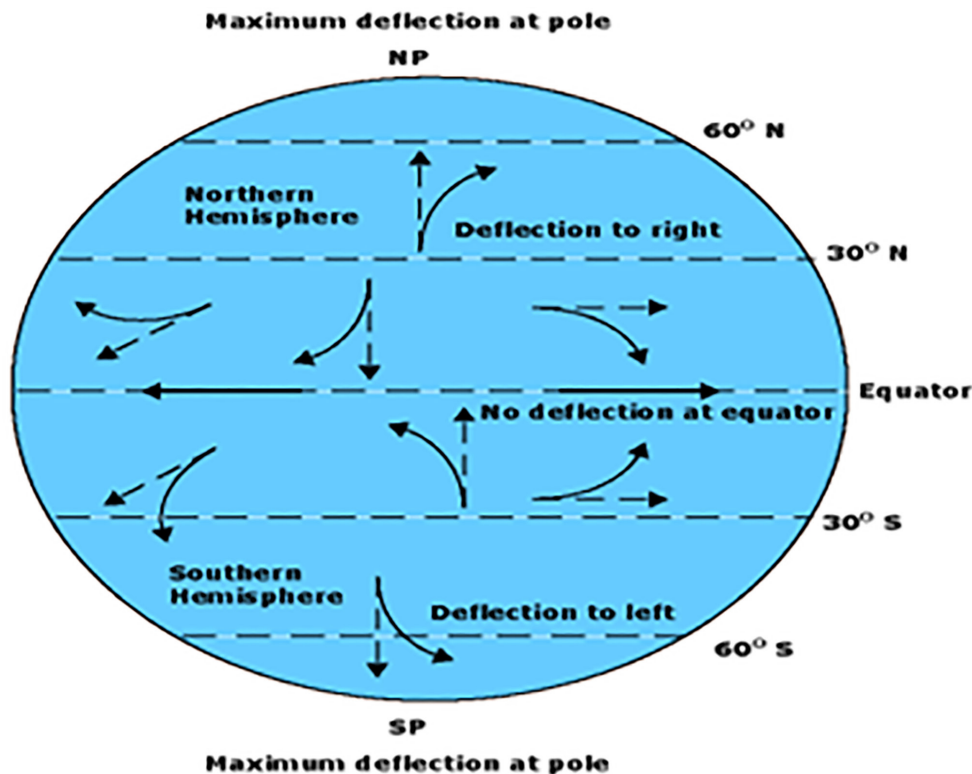
Answer: (a)

Explanation

- The wind blows from high pressure to low pressure. The wind at the surface experiences friction. In addition, the rotation of the earth also affects the wind movement. The force exerted by the rotation of the earth is known as the Coriolis force.
 - As the **earth spins in a counter-clockwise direction on its axis**, the Coriolis force deflects the wind to the right direction in the northern hemisphere and to the left in the southern hemisphere. **Hence, statement 1 is correct.**



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- The Coriolis force acts perpendicular to the pressure gradient force. The pressure gradient force is perpendicular to an isobar. The higher the pressure gradient force, the more is the velocity of the wind and the larger is the deflection in the direction of wind.
 - As a result of these two forces operating perpendicular to each other, in the low-pressure areas the wind blows around it. At the equator, the Coriolis force is zero and the wind blows perpendicular to the isobars
 - In short, the **Coriolis force is directly proportional to the latitude**. So, it is maximum at the poles and is absent at the equator. **Hence, statement 2 is not correct**

QUESTION 26:

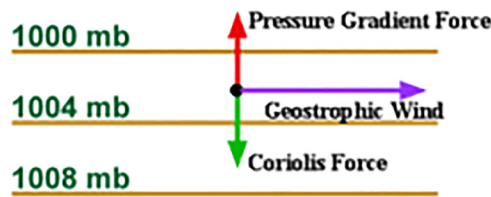
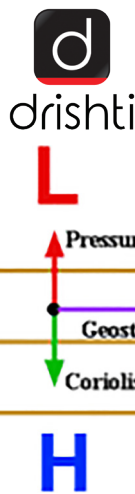
Which of the following is **not correct** regarding geostrophic wind?

- (a) Geostrophic wind blows parallel to the isobars.
- (b) Geostrophic wind generally develops when friction is zero or very low.
- (c) Geostrophic wind comes about when Coriolis force equals the pressure gradient force.
- (d) Geostrophic wind occurs in the lower atmosphere at the pole.

Answer: (d)

Explanation

- The velocity and direction of the wind are the net result of the wind generating forces (pressure gradient force (PGF), frictional force and the Coriolis force(CF)).
- The winds in the upper atmosphere, 2 – 3 km above the surface, are **free from the frictional effect** of the surface and are controlled mainly by the pressure gradient and the Coriolis force.
- When **isobars** (These are lines on a weather map joining together places of equal atmospheric pressure) **are straight and when there is no friction, the pressure gradient force is balanced by the Coriolis force (PGF = CF)** and the resultant **wind blows parallel to the isobar**. This wind is known as the geostrophic wind **Hence, statements A, B and C are correct.**



- Geostrophic winds occur when the frictional force is zero or very low which is found in the upper layers of the atmosphere. Thus, such wind can only be found at altitudes above 1000 metres (3300 ft.) above ground level. **Hence, statements D is not correct.**

QUESTION 27:

Which of the following is/are correct regarding 'ecological niche'?

1. It describes the position and ecological role of a species within an ecosystem.
2. Two different species can't have an exact identical niche.

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: (d)

Explanation

- An **ecological niche describes** how a species interacts with, and lives in, its habitat. It has specific characteristics, such as **availability of nutrients, temperature, terrain, sunlight and predators**, which dictate how, and how well, a species survives and reproduces. **Hence, statement 1 is correct.**
- A species carves out a **niche for itself in habitat** by being able to adapt and diverge from other species. Modern-day ecologists study ecological niches in terms of the impact the species has on its environment, as well as the species' requirements.
- A niche is **unique for a species**, which means **no two species have exact identical niches**. Niche plays an important role in the conservation of organisms.
 - For the conservation of species in its native habitat, the knowledge about the niche requirements of the species is required. It is ensured that all requirements of its niche are fulfilled. **Hence, statement 2 is correct.**
- Types of Niche
 - Habitat niche – where it lives
 - Food niche – what it eats or decomposes & what species it competes with
 - Reproductive niche – how and when it reproduces.
 - Physical & chemical niche – temperature, land shape, land slope, humidity & other requirements.

QUESTION 28:

Consider the following statements:

1. Ecotone is the transitional zone between two diverse ecosystems.
2. Higher diversity of birds are the example of edge effects found in the ecotone zone.
3. Ecotones are a sensitive indicator of global climate change.

Which of the statements given above is/are correct?

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

Answer: (d)

Explanation

- **Ecotone** is a **transitional area** between two biomes or **diverse ecosystems** (where two communities meet & integrate)
 - For example: between a field and forest, between forest and grassland. **Hence, statement 1 is correct.**
- It may appear as a **gradual blending of the two communities across a broad area** or may manifest itself as a sharp boundary line.
 - They have a greater variety of organisms.
 - They also offer a good nesting place for animals coming in search of a nesting place or food.
 - They serve as a bridge of gene flow from one population to another because of the larger genetic diversity present.
- It may contain some organisms which are entirely different from that of adjoining communities. Sometimes the number of species & population density of some of the species is much greater in this zone than either community, Known as the **edge effect**.
 - Organisms which occur primarily or most abundantly in this zone are known as edge species.
 - In the terrestrial ecosystems edge effect is especially applicable to birds.
 - For example, the **density of birds is greater in the mixed habitat** of the **ecotone** between the forest and the desert. **Hence, statement 2 is correct.**
- They can act as **buffer zones** offering **protection to the bordering ecosystems** from possible damage.
 - For example, a wetland can absorb pollutants and prevent them from seeping into the river.
- Ecotones are also a **sensitive indicator of global climate change**. A shifting of boundaries between ecosystems is thought to be due to climate change. **Hence, statement 3 is correct.**

QUESTION 29:

Consider the following statements:

1. Biomagnification is the increase of toxic chemicals in the food chain.
2. Toxic accumulation is concentrated more in organisms at lower levels in the food chain.

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

- **Biomagnification** stands for Biological Magnification, which means the increase of contaminated substances or toxic chemicals that takes place in the food chain. These substances often arise from intoxicated or contaminated environments. **Hence, statement 1 is correct.**
- The contaminants include heavy metals, namely **mercury, arsenic, pesticides** such as **DDT, and polychlorinated biphenyls (PCBs)** compounds which are taken up by organisms because of the food they consume or the intoxication of their environment.

- When organisms in the **higher food chain consume the organisms containing the toxins below their trophic levels**, the toxins gradually become **concentrated** in the higher food chain.
- Because this is a repetitive process in the ecosystem and throughout the entire food chain, the **higher organisms are the ones that will accumulate** most of the toxins. **Hence, statement 2 is not correct.**

QUESTION 30:

Which of the following is/are the reasons for greater biological diversity in Tropical areas as compared to Temperate areas?

1. In tropical regions, a longer and more stable evolutionary period has resulted in more species diversification.
2. Tropical environments are more seasonal and less predictable.
3. More solar energy is available in the tropics.

Select the correct answer using the code given below:

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

Answer: (a)

Explanation

- Tropics account for their greater biological diversity
- Ecologists and evolutionary biologists have proposed various hypotheses; some important ones are:
 1. Speciation is generally a function of time, unlike temperate regions subjected to frequent glaciations in the past, tropical latitudes have remained relatively undisturbed for millions of years and thus, had a long evolutionary time for species diversification. **Hence, statement 1 is correct.**
 2. Tropical environments, unlike temperate ones, are less seasonal, relatively more constant and predictable. Such constant environments promote niche specialisation and lead to a greater species diversity. **Hence, statement 2 is NOT correct.**
 3. There is more solar energy available in the tropics, which contributes to higher productivity; this in turn might contribute indirectly to greater diversity. **Hence, statement 3 is correct.**

QUESTION 31:

With reference to 'Synthetic biology', consider the following statements:

1. It aims at redesigning and fabrication of biological components that already exist in the natural world
2. It can potentially be used to solve problems in medicine, manufacturing and agriculture

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

- Synthetic biology is a new interdisciplinary area that involves the application of engineering principles to biology. It aims at **(re-)designing and fabrication of biological components** and systems that do not already exist in the natural world but **also edit the genetic composition of available life**. With this, De novo synthesis (starting from the beginning) of life is now possible. Hence, it has its application for both. **Hence, Statement 1 is correct.**
- Synthetic biology researchers and companies around the world are harnessing the power of nature to solve problems in medicine, manufacturing and agriculture.
- Redesigning organisms so that they produce a substance, such as a medicine or fuel, or gain a new ability, such as sensing something in the environment, are common goals of synthetic biology projects. Some examples of what scientists are producing with synthetic biology are:
 - Microorganisms harnessed for bioremediation **to clean pollutants** from our water, soil and air.
 - **Rice modified to produce beta-carotene**, a nutrient usually associated with carrots, that prevents vitamin A deficiency.
 - **Yeast engineered to produce rose oil** as an eco-friendly and sustainable substitute for real roses that perfumers use to make luxury scents. **Hence, Statement 2 is correct**

QUESTION 32:

Consider the following statements:

1. Agrobiodiversity includes all components of biological diversity of relevance to food and agriculture
2. India has only two Globally Important Agricultural Heritage Systems (GIAHS).

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

- Convention on Biological Diversity (CBD) defines agrobiodiversity as-
 - Agricultural biodiversity is a broad term that includes **all components of biological diversity of relevance to food and agriculture**, and all components of biological diversity that constitute the agricultural ecosystems, also named agro-ecosystems: the variety and variability of animals, plants and microorganisms, at the genetic, species and ecosystem levels, which are necessary to sustain key functions of the agro-ecosystem, its structure and processes.
 - Agricultural biodiversity is the outcome of the interactions among genetic resources, the environment and the management systems and practices used by farmers. This is the result of both natural selection and human inventive developed over millennia. **Hence, Statement 1 is correct.**
- Globally Important Agricultural Heritage Systems (GIAHS) are outstanding landscapes of aesthetic beauty that combine agricultural biodiversity, resilient ecosystems and valuable cultural heritage. Located in specific sites around the world, they sustainably provide multiple goods and services, food and livelihood security for millions of small-scale farmers.
 - Across the world, 37 sites are designated as GIAHS, of which **three are Indian – Kashmir (saffron), Koraput (traditional agriculture) and Kuttanad (below sea-level farming)**. **Hence, Statement 2 is not correct.**

QUESTION 33:

Consider the following pairs:

Genetically Conferred Trait	Example Organism
1. Herbicide tolerance	Soyabean
2. Insect resistance	Corn
3. Altered fatty acid composition	Canola
4. Virus resistance	Plum

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

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

Answer: (d)

Explanation

- Agricultural plants are one of the most frequently cited examples of genetically modified organisms (GMOs). Some benefits of genetic engineering in agriculture are increased crop yields, reduced costs for food or drug production, reduced need for pesticides, enhanced nutrient composition and food quality, resistance to pests and diseases, greater food security, and medical benefits to the world's growing population
- A number of animals have also been genetically engineered to increase yield and decrease susceptibility to disease. For example, salmon have been engineered to grow larger and mature faster, and cattle have been enhanced to exhibit resistance to mad cow disease
- Some of the examples are as below:

Herbicide tolerance	Soybean	Glyphosate herbicide (Roundup) tolerance conferred by expression of a glyphosate-tolerant form of the plant enzyme isolated from the soil bacterium <i>Agrobacterium tumefaciens</i>
Insect resistance	Corn	Resistance to insect pests, specifically the European corn borer, through expression of the insecticidal protein Cry1Ab from <i>Bacillus thuringiensis</i>
Altered fatty acid composition	Canola	High laurate levels achieved by inserting the gene for ACP thioesterase from the California bay tree <i>Umbellularia californica</i>
Virus resistance	Plum	Resistance to plum pox virus conferred by insertion of a coat protein (CP) gene from the virus

Hence, all given options are correctly matched

QUESTION 34:

With reference to 'transportation system in plants and animals', consider the following statements:

- 1. In animals, transportation is carried out through the circulatory system.
- 2. Phloem conducts water and minerals while Xylem transports prepared food.

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

- In animals, transportation is carried out through the circulatory system. This system includes the **heart, blood, and blood carrying blood vessels**. In human beings, the various organs associated with this system include the heart, lungs, blood vessels, capillaries, and blood.
 - The heart is the pumping organ that squirts out blood. The heart does this with so much pressure that it is capable of squirting blood up to 9 meters high. It never stops and beats continuously so that blood can travel to all parts of the body.
 - Blood travels through the blood vessels transporting oxygen, carbon dioxide, digested food, hormones and even waste products. **Hence, Statement 1 is correct**
- **Plants** have particular tissues called vascular tissues for the conduction and transportation of materials throughout the plant parts. Vascular tissues include xylem and phloem. **Xylem conducts water and minerals** from roots to the shoot system while **phloem transports prepared food** from leaves to other plant parts. **Hence, Statement 2 is not correct.**

QUESTION 35:

Which of the following is correct regarding 'SUPRA Scheme' launched recently:

- (a) It is a scheme under which adolescent women are given vocational training under the Skill India programme.
- (b) It is a scheme under the Ministry of Women and Child Development for the rehabilitation of destitute widows.
- (c) It is a scheme initiated by ISRO through which it aims to constantly engage youngsters across India to capture their scientific temperament.
- (d) It is a scheme by the Science and Engineering Research Board (SERB) with the objective of funding exploration of new scientific and engineering breakthroughs with global impact.

Answer: (d)

Explanation

- The **Science and Engineering Research Board (SERB)** has proposed a new scheme, **Scientific and Useful Profound Research Advancement (SUPRA)** with the objective of funding exploration of new scientific and engineering breakthroughs with global impact.
 - The scheme will fund disruptive ideas that can lead to new areas of study, new scientific concepts, new products and technologies.
- SERB was set up as a statutory body in 2009 under the Department of Science and Technology to promote and fund research in different scientific disciplines. **Hence, option D is correct.**

QUESTION 36:

The term "Ramanujan machine", recently seen in the news, is related to:

- (a) It is a piece of space equipment used by ISRO in the Chandrayaan-II mission.
- (b) It is the fastest supercomputer of India developed by C-DAC.
- (c) It is an algorithm developed by researchers from Israel dedicated to finding conjectures.
- (d) It is a mathematical model developed by the India Meteorological Department used for monsoon prediction.

Answer: (c)

Explanation

- Researchers from **Technion – Israel Institute of Technology** have developed a concept, which is described as a '**Ramanujan machine**'.

- It is named after renowned Indian Mathematician Srinivasa Ramanujan.
- The Ramanujan machine is **more of a concept than an actual machine. It exists as a network of computers running algorithms dedicated** to finding conjectures about fundamental constants in the form of continued fractions.
- The purpose of the machine is to come up with conjectures that humans can analyze and hopefully prove to be true mathematically. **Hence option C is correct.**

QUESTION 37:

What was the purpose with which Sir William Wedderburn and W. S. Caine had set up the Indian Parliamentary Committee in 1893? (2011)

- (a) To agitate for Indian political reforms in the House of Commons.
- (b) To campaign for the entry of Indians into the Imperial Judiciary.
- (c) To facilitate a discussion on India's Independence in the British Parliament.
- (d) To agitate for the entry of eminent Indians into the British Parliament.

Answer: (a)

Explanation

- **Sir William Wedderburn** was a civil servant in India from 1860 to 1880s. During his service in India, Wedderburn focussed on **problems of famine, poverty of the Indian peasantry, agricultural indebtedness** and the question of reviving the ancient village system. His concern with these problems brought him in touch with the Indian National Congress.
- He presided over the **fourth Congress session held in Bombay in 1889.**
- He entered Parliament in 1893 as a Liberal Party member and sought to voice India's grievances in the House. He formed the **Indian Parliamentary Committee** with which he was associated as Chairman from 1893 to 1900.
- In 1895, Wedderburn represented India on the **Welby Commission (i.e., the Royal Commission)** on Indian Expenditure. He also began participating in the activities of the Indian Famine Union set up in June 1901, for an investigation into famines and proposing preventive measures.
- Hence, option A is correct.

QUESTION 38:

Q.38 In the Federation established by the Government of India Act of 1935, residuary powers were given to the (2018)

- (a) Federal Legislature
- (b) Governor-General
- (c) Provincial Legislature
- (d) Provincial Governors

Answer: (b)

Explanation

- The **Government of India Act, 1935** was a legislative act by the British Government to bring significant changes in the colonial administration of India.
- Features of the Act:
 - It provided for the creation of the All-India Federation consisting of Provinces and the Princely States as units. But, the federation never came into being as the Princely States did not join it.
 - The Act divided the powers between the Centre and constituent units into three lists – Federal List, Provincial List and the Concurrent List. However, the **residuary powers were given to the Governor-General.**

- It abolished dyarchy in the Provinces and provided for provincial autonomy. However, it introduced dyarchy at the Centre.
- It further expanded the principle of communal representation by extending it to depressed classes, women and labour.
- It introduced bicameralism in six out of eleven Provinces – Bengal, Bombay, Madras, Bihar, Assam and the United Provinces.

Hence, option B is correct.

QUESTION 39:

What was/were the object/objects of Queen Victoria's Proclamation (1858)? (2014)

1. To disclaim any intention to annex the Indian States.
2. To place the Indian administration under the British Crown.
3. To regulate East India Company's trade with India.

Select the correct answer using the code given below:

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

Answer: (a)

Explanation

- Owing to policies like the **Doctrine of Lapse** of British East India Company that were aimed to annex the Princely States and the Revolt of 1857, many influential Princely States such as Awadh, Jhansi and Nagpur and influential landlords like Kunwar Singh, saw British policies as an intrusion into their independence. Thus, to allay the fears of the Princely States and to break the support group (i.e., dissatisfied Princely Rulers) of rebel sepoys – 1858 proclamation clarified the British position in relation to the Princely States. The proclamation denied any intention to annex the Indian States. **Hence, statement 1 is correct.**
- The proclamation of 1858 **abolished the rule of the East India Company** and placed the Indian administration under the British Crown. **Hence, statement 2 is correct.**
- Proclamation sought to **end the English East Company's rule** and establish direct control of the British Crown (i.e., British Parliament). **Hence, statement 3 is not correct.**

QUESTION 40:

The demand for the Tebhaga Peasant Movement in Bengal was for (2013)

- (a) the reduction of the share of the landlords from one-half of the crop to one-third.
- (b) the grant of ownership of land to peasants as they were the actual cultivators of the land.
- (c) the uprooting of the Zamindari system and the end of serfdom.
- (d) writing off all peasant debts.

Answer: (a)

Explanation

- **Tebhaga Movement (1946-47)** was a struggle of sharecroppers in Bengal.
- The movement centred around the demand by the **sharecroppers for Tebhaga** (two-third shares) of their produce for themselves, instead of one-half which was traditionally given to them by the Jotedars – a class of intermediary landowners. Thus, it demanded a reduction of the shares of the landlords from the half to one third.
- **Hence, option A is correct.**

QUESTION 41:

Which of the following were the limitations of the Swadeshi Movement?

1. Lack of ideological consistency among Extremist leaders.
2. Lack of effective organisation or a party structure.

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

- The Extremist **ideology and its functioning lacked consistency**. Its advocates ranged from open members and secret sympathisers to those opposed to any kind of political violence. Its leaders – **Aurobindo, Tilak, B.C. Pal and Lala Lajpat Rai** – had different perceptions of their goal.
 - For Tilak, swaraj meant some sort of self-government, while for Aurobindo it meant complete independence from foreign rule.
 - ◆ But at the politico-ideological level, their emphasis on mass participation and on the need to broaden the social base of the movement was a progressive improvement upon Moderate politics. **Hence, statement 1 is correct.**
- The movement **failed to create an effective organisation or a party structure**. It threw up an entire gamut of techniques that later came to be associated with Gandhian politics – noncooperation, passive resistance, filling of British jails, social reform and constructive work – **but failed to give these techniques a disciplined focus**.
- The movement was rendered leaderless with most of the leaders either arrested or deported by 1908 and with Aurobindo Ghosh and Bipin Chandra Pal retiring from active politics. **Hence, statement 2 is correct.**

QUESTION 42:

Which of the following is/are correct regarding the concept of the 'safety valve theory'?

1. It suggests that the Indian National Congress was formed to release the growing discontent of the Indians.
2. The extremist leaders of Indian National Congress were the believers of this theory.

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

- '**Safety valve**' is a '**Safety valve**' theory originated from **William Wedderburn's** biography of Hume published in 1913. He wrote that in 1878 Hume came across seven volumes of secret reports showing discontent among the lower classes and conspiracy to overthrow British rule.
 - The theory says that **A. O Hume formed the Indian National Congress** with the idea that it would prove to be a 'safety valve' for releasing the growing discontent of the Indians. A. O Hume convinced Lord Dufferin not to obstruct the formation of the Congress.

- A. O Hume met Lord Dufferin and they decided to form an organisation with educated Indians serving as a safety valve by opening up communication between rulers and the ruled, preventing mass revolution. **Hence, statement 1 is correct.**
- Extremist leaders like **Lala Lajpat Rai** believed in the 'safety valve' theory. Even the Marxist historian's 'conspiracy theory' was an offspring of the 'safety valve' notion.
 - R.P. Dutt opined that the Indian National Congress was born out of a conspiracy to abort a popular uprising in India the bourgeois leaders were a party to it.
 - He analysed that the Congress was formed under a British viceroy to act as a safety valve against popular discontent.
 - **Hence, statement 2 is correct.**

QUESTION 43:

Consider the following statements about the Home Rule Movement in India:

1. Annie Besant's league was a regional organisation limited to South India while Tilak's league acquired all-India character.
2. Tilak's league demanded formation of states on linguistic basis.
3. Anglo-Indians supported the movement on a large scale.

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: (b)

Explanation

- Indian Home Rule Leagues were organised on the lines of the Irish Home Rule Leagues and they represented the emergence of a new trend of aggressive politics. **Annie Besant** and B.G Tilak were the pioneers of this new trend.
- **Tilak** set up his Home Rule League in April 1916 and it was restricted to Maharashtra (excluding Bombay city), Karnataka, Central Provinces and Berar.
- **Annie Besant** set up her league in September 1916 in Madras and covered the rest of India (including Bombay city).
 - It had 200 branches, was loosely organised as compared to Tilak's League and had **George Arundale** as the organising secretary. Besides Arundale, the main work was done by **B.W. Wadia** and **C.P. Ramaswamy Aiyar**. **Hence, statement 1 is not correct.**
- The League campaign aimed to convey to the common man **the message of home rule as self-government**.
 - The aim was to be achieved by **promoting political education** and discussion through public meetings, organising libraries and reading rooms containing books on national politics, holding conferences, organising classes for students on politics, carrying out propaganda through newspapers, pamphlets, posters etc.
 - Tilak's League demands included swarajya, **the formation of linguistic states** and education in the vernacular. **Hence, statement 2 is correct.**
- **Anglo-Indians**, most of the Muslims and non-brahmins from the South did not join as they felt Home Rule would mean the rule of the Hindu majority, and that too mainly by the high caste.
 - Anglo-Indians also saw the Home rule movement as the erosion of the authority of the people belonging to their race. **Hence, statement 3 is not correct.**

QUESTION 44:

Consider the following statements with reference to Congress Socialist Party (CSP):

1. It wanted the rule of self-government under British dominion.
2. The CSP functioned outside the Indian National Congress.
3. It had a pro-labour and pro-peasant stand on economic issues.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation

- Congress Socialist Party (CSP) was formed at Bombay in October 1934 under the leadership of Jayaprakash Narayan, Acharya Narendra Dev and Minoo Masani. From the beginning, all the Congress socialists agreed upon four basic propositions:
 - **The primary struggle in India was the national struggle for freedom and nationalism.**
 - **Socialists must work inside the National Congress because it was the primary body leading the national struggle.**
 - They must give the Congress and the national movement a socialist direction.
 - They must **organize the workers and peasants** in their class organizations, wage struggles for **their economic demands** and make them the social base of the national struggle.
 - Thus, the CSP never wanted self-government under British Dominion but complete independence. **Hence, statement 1 is not correct**
 - Also, they just wanted to give a new **socialist direction** to INC movements by functioning within it. **Hence, statement 2 is not correct**
- The CSP advocated decentralized socialism in which co-operatives, trade unions, independent farmers, and local authorities would hold a substantial share of the economic power.
 - CSP even assigned itself the task of gradually persuading the INC to adopt a socialist vision of independent India and a more radical pro-labour and pro-peasant stand on current economic issues. **Hence, statement 3 is correct.**

QUESTION 45:

Regarding the Quit India Movement, consider the following statements:

1. It demanded an immediate end to British rule in India.
2. It remained largely a non-violent struggle movement.
3. Gandhi Ji urged soldiers to leave the Army and to not fire on compatriots.

Which of the statements given above is/are correct?

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

Answer: (a)

Explanation

- The Quit India Resolution was ratified at the Congress meeting at Gowalia Tank, Bombay, on August 8, 1942. The meeting also resolved to

- **demand an immediate end to British rule in India**
 - declare commitment to free India to defend itself against all types of Fascism and imperialism.
 - form a provisional Government of India after the British withdrawal.
 - sanction a civil disobedience movement against British rule. **Hence, statement 1 is correct.**
- Gandhi ji had carefully built the tempo through individual civil disobedience movements or satyagraha, organisational revamping and a consistent propaganda campaign. However, In the early hours of August 9, 1942, in a single sweep, all the top leaders of the Congress were arrested and taken to unknown destinations.
- In retaliation, the **general public attacked symbols of authority** and hoisted national flags forcibly on public buildings. The **bridges were blown up, railway tracks were removed and telegraph lines were cut. Hence, statement 2 is not correct.**
- Gandhi ji special instructions were spelt out at the Gowalia Tank meeting but not actually issued. They were directed at various sections of society.
- **Government servants:** Do not resign but declare your allegiance to the Congress.
 - **Soldiers: Do not leave the Army but do not fire on compatriots. Hence, statement 3 is not correct.**

QUESTION 46:

With reference to the C. Rajagopalachari (CR) Formula, consider the following statements:

1. A plebiscite was mandated to decide whether or not to form a separate sovereign state.
2. Gandhi Ji didn't support the CR formula.

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

- C. Rajagopalachari (CR), the veteran Congress leader, prepared a formula for Congress-League cooperation in 1944. It was a tacit acceptance of the League's demand for Pakistan. The main points in the CR Plan were:
- **Muslim League to endorse Congress demand for independence.**
 - League to cooperate with Congress in forming a provisional government at the centre.
 - After the end of the war, the entire population of Muslim majority areas in the North-West and North-East India to **decide by a plebiscite, whether or not to form a separate sovereign state. Hence, statement 1 is correct.**
 - In case of acceptance of partition, agreement to be made jointly for safeguarding defence, commerce, communications, etc.
 - The above terms to be operative only if England transferred full powers to India.
- **Gandhi supported the formula. But Jinnah rejected it.**
- Jinnah wanted Congress to accept the two-nation theory.
 - Jinnah wanted only the Muslims of North-West and North-East to vote in the plebiscite and not the entire population.
 - Jinnah also opposed the idea of a common centre. **Hence, statement 2 is not correct.**

QUESTION 47:

Which of the following is/are correct regarding the 'Deccan Riots'?

1. The peasants were heavily taxed under the Ryotwari system.
2. The tension between moneylenders and the peasants resulted in a social boycott movement.
3. The moneylenders were mostly of European origin.

Select the correct answer using the code given below:

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

Answer: (a)

Explanation

- The ryots of the Deccan region of western India suffered **heavy taxation under the Ryotwari system**. Here, the peasants found themselves trapped in a vicious network with the moneylender as the exploiter and the main beneficiary. **Hence, statement 1 is correct.**
 - The conditions had worsened due to a crash in cotton prices after the end of the American Civil War in 1864, the Government's decision to raise the land revenue by 50% in 1867, and a succession of bad harvests.
- In 1874, the growing tension between the moneylenders and the peasants resulted in a **social boycott movement** organised by the ryots against the **"outsider" moneylenders**.
 - The ryots refused to buy from their shops. No peasant would cultivate their fields. The barbers, washermen, shoemakers would not serve them. This social boycott spread rapidly to the villages of Poona, Ahmednagar, Sholapur and Satara. Soon the social boycott was transformed into **agrarian riots with systematic attacks on the moneylenders'** houses and shops. **Hence, statement 2 is correct.**
 - These moneylenders were **mostly outsiders – Marwaris or Gujaratis**. **Hence, statement 3 is not correct.**
 - The debt bonds and deeds were seized and publicly burnt. The Government succeeded in repressing the movement. As a conciliatory measure, the Deccan Agriculturists Relief Act was passed in 1879.

QUESTION 48:

Which of the following is/are the features of the Government of India Act, 1935?

1. The Act abolished dyarchy at the Provincial level and introduced it at the Centre.
2. It provided for the establishment of the Federal Court.
3. The concept of Universal adult franchise was introduced.

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: (a)

Explanation

- The main provision of **Government of India Act, 1935 were:**
- Establishment of an **All India Federation**: It was to comprise all British Indian provinces, all chief commissioner's provinces and the Indian states (princely states).

- Since these conditions were not fulfilled, the proposed federation never came up. The central government carried on up to 1946 as per the provisions of the Government of India Act, 1919.
- **Dyarchy at the Centre:** The Act of 1935 **abolished dyarchy at the Provincial level and introduced it at the Centre. Hence, statement 1 is correct.**
 - The Federal subjects were divided into two categories: the Reserved and Transferred. The reserved list included Defense, External Affairs, Ecclesiastical Affairs and Tribal Areas.
 - These were to be administered by the Governor-General with the help of three councillors to be appointed by him.
- **Federal Court:** The Act also provided for the establishment of Federal Court to settle disputes arising among the units themselves and also between a unit and the Federal Government. One of the functions was to interpret the controversial clauses of the Act. It was, however, not the final court of appeal. In certain circumstances, the appeal could be made to the Privy Council. **Hence, statement 2 is correct.**
- **Increase in the size of Legislatures and Extension of Franchise:** Another highlight of the Act was the extension of the franchise.
- **Nearly 10 % of the total population got the right to vote.** The Act not only retained the communal electorate but also extended it.
 - The strength of the Council of State was increased to 260 and that of the Legislative Assembly to 375.
 - The Federal Legislature and six out of eleven Provincial legislature became bicameral. **Hence, statement 3 is not correct.**
- **The supremacy of the Parliament:** The Act of 1935 was a rigid one. No Indian legislature whether Federal or provincial was authorised to modify or amend it. The British Government alone was given the authority to make changes in it.
- **Division of Subject:** Under the Act of 1935, the subjects for the administrative purpose were catalogued into three lists: the Federal List, the Provincial List and the Concurrent List.
- **Retention of Communal Electorate:** Although the principle of the communal electorate was in the interests of the nation, yet in order to weaken the growing spirit of nationalism, the Act of 1935 not only retained communal electorate but also enlarged its scope. It granted this whole concession to the Depressed Classes also. The workers and women got separate representation although they had not asked for it.

QUESTION 49:

Which of the following is not correct regarding the later Vedic period?

- (a) There was absolute monarchy rule during the later Vedic period.
- (b) Samiti was the larger general assembly of the people.
- (c) Sabha functioned as a court of justice.
- (d) Satapatha Brahmana indicates the shift of the centre of civilization from Saraswati to Ganga valley.

Answer: (a)

Explanation

- Though the **monarchy established** itself on firm foundations, **it was not absolute** but limited in several ways. Within the framework of kingship, there were operating certain democratic elements. These were:
 1. The people's right in choosing their king;
 2. The conditions imposed on the king's rights and duties;
 3. The king's dependence on the council of his ministers; and the assemblies of people, sabha and samiti, as a check upon king's absolutism

- Under no circumstances was the king considered the sole owner of the kingdom with absolute power over the objects and subjects. The king was supposed to be only a trustee and the kingdom as a trust. **Hence, option A is correct.**
- Besides, the ministers and officials, **sabha and samiti** played an important role in the administration. The **sabha functioned as a parliament** for disposal of public business by debate and discussion.
- The Chief of the sabha was called sabhapati, the keepers as sabhapala and the members as sabheya, sabhasad or sabhasina.
 - There were rules which governed the debate in sabha and **Vajsaneyi Samhita mentions** that the members were critical of the king.
 - Sabha also seems to have functioned as a **court of justice**. It is said that “one who attends the sabha sits as a law court to dispense dharma (Justice)”. **Hence, option B is not correct.**
- The samiti was different than sabha in the function and composition. The sabha was a smaller **select body and also functioned as the lower court**, while the samiti was the larger General Assembly of the people. **Hence, option C is not correct.**
- The main settlement of the Rigvedic people was the region of **Indus and Saraswati Valleys**. During the period represented by the later Samhitas and Brahmanas, the settlements covered virtually the whole of northern India.
 - The centre of civilization now shifted from Saraswati to Ganga which now occupies the proud place of the most revered and sacred river of India.
 - The expansion of people towards the east is indicated in a legend of **Satapatha Brahmana** – how Videgh Madhav migrated from Saraswati region, the land of Vedic Culture, crossed Sadanira (modern Gandak river), the eastern boundary of Kosala and came to the land of Videha (modern Tirhut). **Hence, option D is not correct.**

QUESTION 50:

With reference to the officials in the political system of the later Vedic era, consider the following pairs:

Officials	Functions
1. Sangrahitri	Charioteer
2. Bhagadugha	Collector of taxes
3. Takshan	Chief judge
4. Suta	Treasurer

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

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

Answer: (a)

Explanation

- The complexity in the social and political structure of the later Vedic period is duly reflected in the enlarged entourage of the state. We hear of new officials such as **suta (charioteer)**, **sangrahitri (treasurer)**, **bhagadugha (collector of taxes)**, **gramini (head of the village)**, **sthapati (chief judge)**, **takshan (carpenter)**, **kshatri (chamberlain)** and several others whose exact function cannot be ascertained. Everything indicates that the administrative machinery was highly organised and became an efficient instrument for ruling over a large kingdom. **Hence, pair 2 is correctly matched**

QUESTION 51:

Consider the following statements:

1. Geotextiles are impermeable fabrics which are used in association with soil in civil projects.
2. Jute geotextile is helpful in achieving a higher agricultural yield by enhancing the agronomical characteristics of the soil.
3. Biodegradability of jute makes it unsuitable for geotextile use.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation

- **Geotextile** is a synthetic **permeable** textile material used to improve the soil characteristics. It has the ability to separate, filter, reinforce, protect and drain when used in association with soils. Geotextiles are ideal materials for many infrastructure works such as roads, harbours, landfills, drainage structures, and other civil projects. **Hence, statement 1 is not correct.**
- **Jute Geotextile (JGT)** and **agro textile (JAT)** made from fibres of jute plant have proved effective in addressing soil-related problems in civil engineering and agriculture.
 - **JAT is used to achieve a higher agricultural yield** by enhancing the agronomical characteristics of soil and suppressing the growth of unwanted vegetation like weeds. **Hence, statement 2 is correct.**
- Jute fibre has some unique physical properties like high tenacity, bulkiness, sound & heat insulation property, low thermal conductivity, antistatic property etc. Due to these qualities, jute fibre is more suited for the manufacture of technical textiles in certain specific areas.
- The **geotextiles** act as change agents to the soil to improve its engineering performance, and its **long-term durability is not a technical necessity**. **Biodegradability** is therefore both a **technical and environmental advantage**. Man-made geotextiles are questionable from an environmentalist's perspective despite their longer durability. The stress is now on adopting bio-engineering measures to address soil-related problems in civil engineering. **Hence, statement 3 is not correct.**

QUESTION 52:

Which of the following is/are correct regarding the 'National Educational Alliance for Technology'?

1. It is an alliance with developing EdTech Companies through a Public-Private Partnership model.
2. UGC would be the implementing agency for the programme.
3. It aims to improve personalised learning using artificial intelligence.

Select the correct answer using the code given below:

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

Answer: (a)

Explanation

- **The Ministry of Human Resource Development (MHRD)** has announced a new **National Educational Alliance for Technology (NEAT)** to use technology for better learning outcomes in Higher Education.

- It proposes to create a National Alliance with technology developing EdTech Companies through a Public-Private Partnership (PPP) model. **Hence, statement 1 is correct.**
- **All India Council for Technical Education (AICTE)** would be the implementing agency for the NEAT programme. **Hence, statement 2 is not correct.**
- EdTech companies would be responsible for developing solutions and manage the registration of learners through the NEAT portal.
 - NEAT is aimed at taking the concept of Massive Open Online Courses (MOOCS) platform a step ahead.
 - The scheme aims to use **Artificial Intelligence to make learning more personalized and customized** as per the requirements of the learner. **Hence, statement 3 is correct.**

QUESTION 53:

Consider the following statements:

1. The number of schools in rural areas is more than in urban areas in India.
2. The literacy rate among women is more in rural areas than in urban areas.

Which of the statements given above is/are correct?

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

Answer: (a)

Explanation

- **U-DISE report (2016-2017)** brought out by the **Ministry of Human Resource Development** states that **rural areas account 84.46 per cent of total schools in India** and **71.72 per cent of total student enrolment in India**, more than $2/3^{\text{rd}}$ of teachers are placed in rural India. **Hence, statement 1 is correct.**
- As per census 2011, the **literacy rate in rural areas was around 68 per cent** while it was **84 per cent in urban areas**. Only **59 per cent of rural women** were estimated to be literate compared to **nearly 80 per cent urban women**. **Hence, statement 2 is not correct.**

QUESTION 54:

Which one of the following initiatives is/are launched to raise the standards of education in India?

1. E-Pathshala
2. Diksha
3. SWAYAM Prabha
4. DEEP Portal

Select the correct answer using the code given below:

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

Answer: (b)

Explanation

- **E-Pathshala, Diksha, SWAYAM, SWAYAM PRABHA** are the initiatives launched by the **Ministry of Human Resource Development(MHRD)** to raise the standards of teaching, irrespective of the location of the Schools and Colleges/Institutes.

- **DEEP (Discovery of Efficient Electricity Price)** is an **e-Bidding and e-Reverse auction portal** for procurement of short term power by DISCOMs. The portal is an initiative of the **Ministry of Power** with the objective to introduce uniformity and transparency in power procurement by the DISCOMs and at the same time promote competition in the electricity sector.
- **Hence, option B is correct.**

QUESTION 55:

“Global Goalkeepers Award” is given by which of the following?

- (a) World Bank
- (b) UNO
- (c) Greenpeace International
- (d) Bill and Melinda Gates Foundation

Answer: (d)

Explanation

- Prime Minister Narendra Modi received the **Global Goalkeeper Award** for the implementation of Swachh Bharat Abhiyan.
- The award has been conferred by the **Bill and Melinda Gates Foundation** for the government’s initiatives on sanitation, including the Swachh Bharat Abhiyan.
- It is the campaign to accelerate progress towards sustainable development goals. **Hence, option D is correct.**

QUESTION 56:

The ‘Miyawaki method’, sometimes mentioned in the news is related to

- (a) Afforestation
- (b) Irrigation
- (c) Water Harvesting
- (d) Soil Conservation

Answer: (a)

Explanation

- The Telangana government has introduced the Japanese **“Miyawaki”** method of afforestation to grow urban forests and expand the green cover as well as to meet the stipulated plantation target under the **Telangana Haritha Haaram (TKHH)**. Miyawaki is a technique pioneered by Japanese botanist Akira Miyawaki, that helps build dense, native forests in a short time. **Hence option A is correct.**

QUESTION 57:

With reference to the ‘Consumer Protection Act, 2019’, consider the following statements:

1. It prohibits the endorser of a misleading advertisement from endorsing that particular product or service.
2. It ensures protection against unfair or restrictive trade practices.
3. The Act proposes a consumer protection authority at the State level.

Which of the statements given above is/are correct?

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

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

Answer: (b)

Explanation

- The **Consumer Protection Act, 2019** mentions the Rights of consumers. It includes the right to:
 - be protected against the marketing of goods and services which are hazardous to life and property;
 - be informed of the quality, quantity, potency, purity, standard and price of goods or services;
 - be assured of access to a variety of goods or services at competitive prices; and
 - **seek redressal against unfair or restrictive trade practices. Hence, statement 1 is correct.**
- The Act proposes strict action against the advertiser in case of **misleading advertisements** but not against the media through which the advertisement is being publicised. Celebrities can be fined up to ₹10 lakh. For repeat offences, this may rise to ₹50 lakh, with a jail term of up to five years. **Hence, statement 2 is correct.**
- The **Central government** will set up a **Central Consumer Protection Authority (CCPA)** to promote, protect and enforce the rights of consumers. It will regulate matters related to violation of consumer rights, unfair trade practices, and misleading advertisements. The CCPA will have an investigation wing, headed by a Director-General, which may conduct an inquiry or investigation into such violations. **Hence statement 3 is not correct.**

QUESTION 58:

Which of the following is/are component(s) of the Gandhian constructive programme?

1. Village Sanitation
2. Adivasis
3. Communal Unity
4. Provincial languages

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, 3 and 4

Answer: (d)

Explanation

- **The Gandhian constructive programme** was based on the idea that foreign domination in India lived and prospered because of our negligence towards fundamental duties as a nation. The advancement of any nation crucially depends on the performance of such duties. He believed that when duties are fulfilled, the rights will automatically flow.
- The original thirteen items were: (1) **Communal Unity** (2) Removal of Untouchability (3) Prohibition (4) Khadi (5) Village Industries (6) **Village Sanitation** (7) Nai Talim or Basic Education (8) Adult Education (9) Women (10) Knowledge of Health and Hygiene (11) **Provincial languages** (12) National Language (13) Economic Inequality. To this, Gandhi added five more items: (1) Kisans (2) Labour (3) **Adivasis** (4) Lepers (5) Students. **Hence, option D is correct.**

QUESTION 59:

Which of the following Gandhian philosophy is the guiding concept of Corporate Social Responsibility?

- (a) Swaraj
(b) Satyagrah

- (c) Trusteeship
- (d) Non-possession

Answer: (c)

Explanation

- Gandhi's concept of **trusteeship** tells capitalists to act as trustees (not owners) of their property and conduct themselves in a socially responsible way.
- **Corporate Social Responsibility (CSR)** links the Corporate Sector to the Social Sector. It is becoming more relevant in our society plagued by increasing inequalities between the haves and have-nots.
- **CSR means that the corporate sector, which earns profit through the sale of its goods and services in society also has some responsibility towards it.** This is essential to promote growth with equity and to achieve an inclusive society. An increasing number of industrial houses are taking an active interest in the welfare of the employees, their families and society at large. **Hence, option C is correct.**

QUESTION 60:

With reference to 'Brown Adipose Tissue', consider the following statements:

1. It rapidly generates heat and metabolizes macronutrients.
2. Caffeine consumption increases activity in brown adipose tissue.
3. It is abundant in adult humans and increases with age.

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: (b)

Explanation

- **Brown Adipose Tissue (BAT) or brown fat**, is one of two types of fat that humans and other mammals have. Its main function is to turn food into body heat. It is sometimes called "**good**" fat. Human newborns and hibernating mammals have high levels of brown fat. Brown adipose tissue rapidly generates heat and metabolizes macronutrients such as glucose and lipids through the activation of mitochondrial uncoupling protein. **Hence, statement 1 is correct.**
- Coffee may have a **direct effect on our brown fat functions**. The potential implications of our results are pretty big, as obesity is a major health concern for society and we also have a growing diabetes epidemic and brown fat could potentially be part of the solution in tackling them. According to the latest research, there is an increase in brown adipose tissue activity after consuming coffee, suggesting that **caffeine may promote weight loss. Hence, statement 2 is correct.**
- Brown adipose tissue is especially abundant in newborns and in hibernating mammals. It is also present and metabolically active in adult humans, but its **prevalence decreases as humans age. Hence, statement 3 is not correct.**

QUESTION 61:

Consider the following pairs:

Newspapers

1. Swadesamitran
2. Amrita Bazar Patrika
3. Voice of India

Associated Personalities

- G. Subramaniya Aiyar
- Surendranath Banerjea
- Dadabhai Naoroji

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

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

Answer: (c)

Explanation

- The Indian National Congress in its early days relied solely on the press to propagate its resolutions and proceedings. Many newspapers emerged during these years under distinguished and fearless journalists.
 - These included The Hindu and **Swadesamitran** under **G. Subramaniya Aiyar**. Hence, pair 1 is correctly matched.
 - The Bengalee under Surendranath Banerjea.
 - **Voice of India** under Dadabhai Naoroji. Hence, pair 3 is correctly matched.
 - **Amrita Bazar Patrika** under **Sisir Kumar Ghosh** and **Motilal Ghosh**. Hence, pair 2 is not correctly matched.
 - Indian Mirror under N.N. Sen, Kesari (in Marathi) and Maharatta (in English) under Bal Gangadhar Tilak, Sudharak under Gopal Krishna Gokhale, and Hindustan and Advocate under G.P. Verma.
 - Other main newspapers included **Tribune** and **Akbhar-i-am** in Punjab, **Gujarati**, **Indu Prakash**, **Dhyan Prakash** and **Kal** in Bombay and **Som Prakash**, **Banganivasi** and **Sadharani** in Bengal. Hence, option C is correct.

QUESTION 62:

Consider the following statements:

1. The Vernacular Press Act (VPA), 1878 sought to curb the criticism of inhuman treatment to victims of famine.
2. The Amrita Bazar Patrika turned overnight into an English newspaper to escape the VPA.

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 movement, from its very beginning, stood for the freedom of the press. The Indian newspapers became **highly critical of Lord Lytton's administration** especially regarding its **inhuman treatment to victims of the famine of 1876-77**. The Government struck back with the Vernacular Press Act, 1878. Hence, statement 1 is correct.
- The Act came to be nicknamed the Gagging Act. The worst features of this Act were:
 1. Discrimination between English and vernacular press.
 2. No right of appeal.
- Under VPA, proceedings were instituted against **Som Prakash**, **Bharat Mihir**, **Dacca Prakash** and **Samachar**. (Incidentally, the Amrita Bazar Patrika turned overnight into an English newspaper to escape the VPA). Hence, statement 2 is correct.

- Later, the pre-censorship clause was repealed, and a press commissioner was appointed to supply authentic and accurate news to the press.
 - Due to the strong opposition to the Act, Ripon repealed it in 1882.
- In 1883, **Surendranath Banerjee became the first Indian journalist** to be imprisoned. In an arousing editorial in The Bengalee, Surendranath Banerjee had criticised a judge of Calcutta High Court for being insensitive to the religious sentiments of Bengalis in one of his judgements.

QUESTION 63:

Which of the following is correct regarding 'Wardha Scheme'?

1. It was recommended by a committee headed by Zakir Hussain.
2. It sought to provide education through some form of craft or productive work.

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 Indian National Congress organised a National Conference on Education in October 1937 in Wardha. In the light of the resolutions passed there, **Zakir Hussain committee formulated** a detailed national scheme for basic education. **Hence, statement 1 is correct.**
- The main principle behind this scheme was '**learning through activity**'. It was based on **Gandhi's ideas** published in a series of articles in the weekly Harijan. Gandhi thought that Western education had created a gulf between the educated few and the masses and had also made the educated elite ineffective. The scheme had the following provisions.
 1. Inclusion of a basic handicraft in the syllabus.
 2. First seven years of schooling to be an integral part of a free and compulsory nationwide education system (through mother tongue).
 3. Teaching to be in Hindi from class II to VII and in English only after class VIII. Ways to be devised to establish contact with the community around schools through service.
 4. A suitable technique to be devised with a view of implementing the main idea of basic education – educating the child through the medium of productive activity of a suitable handicraft. **Hence, statement 2 is correct.**
- The system, rather than being a methodology for education, was an expression of an idea for a new life and a new society. The basic premise was that only through such a scheme India could be an independent and non-violent society. This scheme was child-centred and cooperative.
 - There was not much development of this idea, because of the start of the Second World War and the resignation of the Congress ministries (October 1939).

QUESTION 64:

Consider the following statements:

1. The Hunter Commission mostly confined its recommendations to primary and secondary education.
2. The Raleigh Commission was set up to give recommendations on conditions and prospects of universities.

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

Hunter Education Commission (1882-83)

- Earlier schemes had neglected primary and secondary education. When education was shifted to provinces in 1870, primary and secondary education further suffered because the provinces already had limited resources at their disposal.
- In 1882, the Government appointed a commission under the chairmanship of **W.W. Hunter** to review the progress of education in the country since the Wood's Despatch of 1854. The Hunter Commission mostly **confined its recommendations to primary and secondary education. Hence, statement 1 is correct.**
- The commission –
 1. emphasised that state's special care is required for **extension and improvement of primary education** and that primary education should be imparted through vernacular.
 2. recommended transfer of control of primary education to newly set up district and municipal boards.
 3. recommended that secondary (High School) education should have two divisions –
 - ◆ literary – leading up to university.
 - ◆ vocational – for commercial or non-literary pursuit.
 4. drew attention to inadequate facilities for female education, especially outside presidency towns and made recommendations for its spread.
- In 1902, the **Raleigh Commission** under Sir Thomas Raleigh was set up to look into **conditions and prospects of universities in India** and to suggest measures for improvement in their constitution and functioning. The commission precluded from reporting on primary or secondary education. Based on its recommendations, the Indian Universities Act was passed in 1904. **Hence, statement 2 is correct.**

QUESTION 65:

Which of the following leaders were associated with the All India Trade Union Congress?

1. Lala Lajpat Rai
2. C.R. Das
3. P.C. Joshi
4. Dewan Chaman Lal

Select the correct answer using the code given below:

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

Answer: (d)

Explanation

- The **All India Trade Union Congress** was founded on October 31, 1920. The Indian National Congress president for the year, **Lala Lajpat Rai, was elected as the first president of AITUC** and **Dewan Chaman Lal as the first general secretary.**

- Lajpat Rai was the first to link capitalism with imperialism – “imperialism and militarism are the twin children of capitalism”. The prominent Congress and swarajist leader **C.R. Das** presided over the third and the fourth sessions of the AITUC.
- The **Gaya session of the Congress (1922)** welcomed the formation of the AITUC and a committee was formed to assist it. **C.R. Das** advocated that the Congress should take up the workers’ and peasants’ cause and incorporate them in the struggle for swaraj or else they would get isolated from the movement.
 - Other leaders who kept close contacts with the AITUC included Nehru, Subhas Bose, C.F. Andrews, J.M. Sengupta, Satyamurthy, V.V. Giri and Sarojini Naidu. In the beginning, the AITUC was influenced by social democratic ideas of the British Labour Party.
- A strong **communist influence** on the movement lent a militant and revolutionary content to it. In 1928, there was a six-month-long strike in **Bombay Textile Mills** led by the **Girni Kamgar Union**.
 - The whole of 1928 witnessed unprecedented industrial unrest. This period also saw the crystallisation of various **communist groups**, with leaders like S.A. Dange, Muzaffar Ahmed, **P.C. Joshi**, Sohan Singh Joshi etc.
- Hence, option D is correct.

QUESTION 66:

‘Delhi Pact, 1950’ is related to which of the following?

- (a) Land boundary agreement
- (b) Problems of refugees
- (c) Accommodation of princely states
- (d) Membership of Commonwealth

Answer: (b)

Explanation

- To resolve the **problems of refugees and restore communal peace** in the two countries, especially in Bengal (East Pakistan as well as West Bengal), the Indian prime minister, **Jawaharlal Nehru** and the Pakistani prime minister, **Liaquat Ali Khan**, signed an agreement on April 8, 1950.
- The agreement, known as the Delhi Pact on Minorities or Liaquat-Nehru Pact, envisaged the **appointment of ministers from minority communities** in both Pakistan and India at both central and provincial levels. Under the pact, minority commissions were to be set up, together with the Commissions of Inquiry to look into the probable causes behind the communal riots on both sides of the border (in Bengal), and to recommend steps to prevent recurrence of such incidents.
- Under the pact, India and Pakistan also **agreed to include representatives of the minority community in the cabinets of East Pakistan and West Bengal** and decided to depute two central ministers, one from each government, to remain in the affected regions for such a period as might be necessary. Hence, option B is correct.

QUESTION 67:

Consider the following statements:

1. The election to the Constituent Assembly was held through indirect elections.
2. The seats for provinces were distributed among Muslims, Sikhs and Generals.
3. The princely states did not participate in the constitution-making process.

Which of the statements given above is/are correct?

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

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

Answer: (a)

Explanation

- The **Constituent Assembly** was to be elected **indirectly by the Provincial Assemblies**. The provinces of British India were grouped into three categories-A, B and C. Each province was allotted seats on the basis of the population, in the ratio of one member for a million. **Hence, statement 1 is correct.**
- The seats given to a province were **decided among three communities on the basis of their number, the three communities being the Muslims, Sikhs and General** including Hindus and all others who were not Muslims and Sikhs. **Hence, statement 2 is correct.**
 - They were to be elected by the representatives of each community in their respective legislative assemblies by the method of **proportional representation with single transferable vote.**
- The number of members allotted to the **Indian states was also to be fixed on the same basis of population** as adopted for British India, but the method of their selection was to be settled later by consultation.
- The strength of the constitution-making body was to be 389. Of these, 296 representatives were to be from British India, (292 representatives drawn from the eleven Governors' Provinces of British India and a representative each from the four Chief Commissioners' Provinces of Delhi, Ajmer-Merwara, Coorg and British Baluchistan) and 93 representatives from the Indian states.
 - The states' representatives were to be nominated by the respective rulers.
 - The 93 seats meant for the states' representatives remained vacant and the princely states decided not to participate in the Constituent Assembly. However, representatives of some of the states (Baroda, Bikaner, Jaipur, Patiala, Rewa, and Udaipur) entered the Assembly by April 1947 and by August 15, 1947 and, soon after, all the states had sent their representatives to the Assembly. **Hence, statement 3 is not correct.**

QUESTION 68:

Consider the following pairs:

Publications

1. The Socialist
2. Navayug
3. Labour-Kisan Gazette

Personalities

- S.A. Dange
Muzaffar Ahmed
Nazrul Islam

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

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

Answer: (b)

Explanation

- Several socialist and communist groups came into existence all over the country. Various pamphlets and magazines were published across India.
- In Bombay, **S.A. Dange** published a pamphlet **Gandhi and Lenin** and started the first socialist weekly, **The Socialist**. **Hence, pair 1 is correctly matched.**
- In Bengal, **Muzaffar Ahmed** brought out **Navayug** and later founded the **Langal** in cooperation with the poet **Nazrul Islam**. **Hence, pair 2 is correctly matched.**
- In Punjab, **Ghulam Hussain** and others published Inquilab.
- In Madras, **M. Singaravelu** founded the **Labour-Kisan Gazette**. **Hence, pair 3 is not correctly matched.**

QUESTION 68:

With reference to the 'Rotavirus', consider the following statements:

1. It is a non-contagious disease that cannot spread easily from person to person.
2. It can cause diarrhoea, which can lead to dehydration.
3. It attacks the villus tip of the small intestine and obstructs digestion and absorption.

Which of the statements given above is/are not correct?

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

Answer: (a)

Explanation

- Rotavirus is a **contagious disease that spreads easily from child to child**. Rotavirus spreads when a person comes in contact with the faeces of someone who has rotavirus and then touches his own mouth. **Hence statement 1 is not correct.**
- Rotavirus can cause diarrhoea, which can lead to dehydration (not having enough water in the body). **Hence statement 2 is correct.**
- Rotavirus attacks the villus tip of the small intestine and obstructs digestion and absorption. **Hence statement 3 is correct.** The Rotavac vaccine included in **India's Universal Immunisation Programme (UIP)**. The other vaccine included in UIP are Inactivated Polio Vaccine (IPV), Measles, Rubella (MR) vaccine, Adult Japanese Encephalitis (JE) vaccine, Tuberculosis, Diphtheria, Pertussis, Hepatitis B, Pneumonia and Meningitis due to Haemophilus Influenzae type b (Hib).

QUESTION 70:

Consider the following statements:

1. Soaps are effective in hard water while detergents are effective in soft water.
2. Soaps are biodegradable while detergents are not.
3. Soaps are environment-friendly while detergents can cause the death of aquatic animals.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation

- Soaps and detergents act as surfactants (gets water to wet the fibre) and as emulsifiers (separates the dirt from the fibres and suspends it so that water can rinse it away).
 - **Soap produces good lather in soft water** as soft water does not contain any dissolved calcium and magnesium ions.
 - In hard water, dissolved calcium or magnesium ions react with sodium stearate (soaps) and form a white or grey scum. Thus, **detergents (Sodium alkyl sulfate) are more effective than the soaps in hard water** as their magnesium or calcium salts are soluble in hard water. **Hence, statement 1 is not correct.**
- Soaps are formed by the reaction of alkaline, fats, and oils. These are the sodium salts of fats and oils. Fats and oils can easily be broken down into simple molecules by microbes and hence soaps are biodegradable.

- Detergents are synthetic compounds generally ammonium or sulfate salts of long chain carboxylic acids. These synthetic compounds cannot be broken down into simple molecules by microbes and hence detergents are non-biodegradable. **Hence, statement 2 is correct.**
- Many people believe soap to be the better environmental option, but the truth is both soaps and detergents can negatively impact the environment to some degree.
 - Commercial soap production utilizes expensive natural resources like vegetable oil. Soap requires extra water for rinsing.
 - Detergents are non-biodegradable and can form a thick foam that causes the death of aquatic life. **Hence, statement 3 is not correct.**

QUESTION 71:

Which of the following statements about tropical rain forests is **not** correct?

- (a) Tropical rain forests are among the most diverse and rich communities on the earth.
- (b) Both temperature and humidity remain high and more or less uniform.
- (c) The extreme dense vegetation remains vertically stratified with tall trees
- (d) Undergrowth is highly flourished in tropical rain forests.

Answer: (d)

Explanation

Some characteristics of tropical rain forests are as follow:

- Tropical rain forests occur near the equator
- Tropical rain forests are among the **most diverse and rich communities on the earth.**
- **Both temperature and humidity remain high and more or less uniform.**
- The annual rainfall exceeds 200 cm and is generally distributed throughout the year.
- The extreme dense vegetation of the **tropical rain forests remains vertically stratified with tall trees** often covered with vines, creepers, lianas, epiphytic orchids and bromeliads.
- The lowest layer is an understory of trees, shrubs, herbs, like ferns and palms.
- Soil of tropical rainforests are red latosols, and they are very thick.
- The high rate of leaching makes these soils virtually useless for agricultural purposes, but when left undisturbed, the rapid cycling of nutrients within the litter layer, formed due to decomposition can compensate for the natural poverty of the soil.

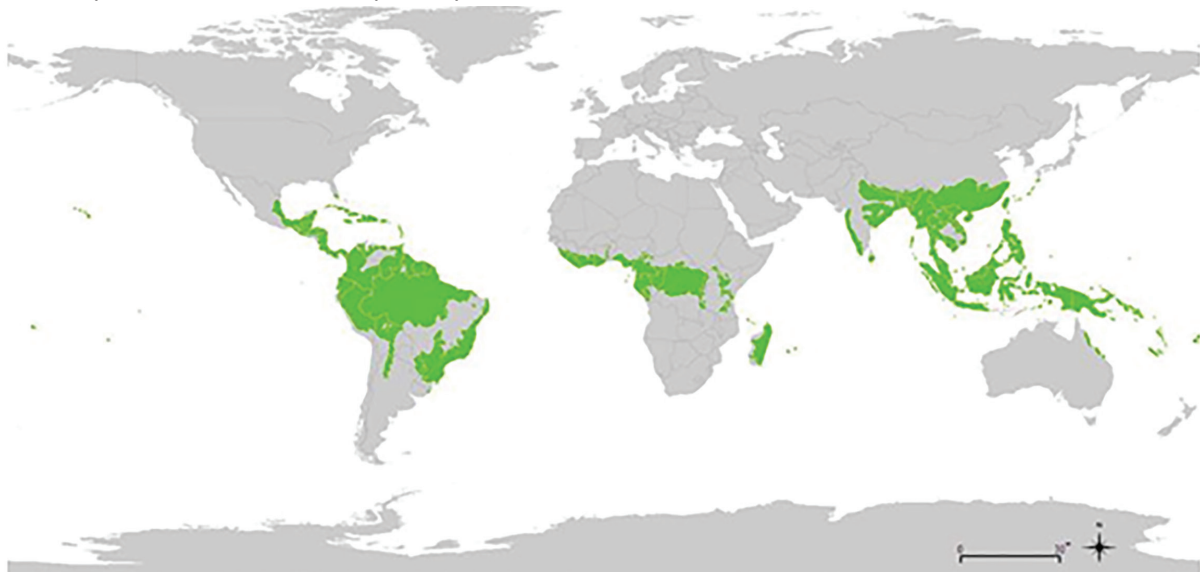


Fig: Distribution of tropical rain forests in world

- **Undergrowth is restricted in many areas by the lack of sunlight at ground level.** It's very dark down there. Almost no plants grow in this area, as a result. Since hardly any sun reaches the forest floor things begin to decay quickly.
 - Hence, statement D is not correct.

QUESTION 72:

With reference to 'Red tide', consider the following statements:

1. It is a type of algal blooms which can discolor coastal waters.
2. It is a type of algal bloom which is always red in colour.

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

- **Red tide** is a phenomenon caused by algal blooms during which algae become so numerous that **they discolor coastal waters. Hence, statement 1 is correct.**
- The term "red tide" is thus a misnomer because **blooms are not always red**, they are **not associated with tides**, they are **usually not harmful**, and some species can be harmful or dangerous at low cell concentrations that do not discolor the water. They are scientifically referred to as **Harmful Algal Blooms (HABs)**. **Hence, statement 2 is not correct.**
- Major factors influencing red tide events include warm ocean surface temperatures, low salinity, high nutrient content, calm seas, and rain followed by sunny days during the summer months.

QUESTION 73:

Consider the following statements with reference to 'Jal Marg Vikas Project (JMVP)'

1. It focuses on the capacity augmentation of navigation of National Waterway-1
2. Asian Development Bank (ADB) provides technical and financial assistance for the project.
3. The first riverine multi-modal terminal was inaugurated at Sahibganj, Jharkhand.

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

- The Jal Marg Vikas Project (JMVP) for capacity augmentation of navigation on Haldia-Varanasi stretch of National Waterway-1 (NW-1). **Hence, statement 1 is correct.**
- JMVP is being implemented by the support of **the World Bank**. It provides technical and financial assistance for the project, not ADB. **Hence, statement 2 is not correct.**
- **The second riverine multi-modal terminal** on River Ganga was inaugurated at Sahibganj, Jharkhand. The first riverine multi-modal terminal is in Varanasi, Uttar Pradesh. **Hence, statement 3 is not correct.**

QUESTION 74:

Regarding e-cigarettes, consider the following statements:

1. E-cigarettes are regulated under Cigarettes and Other Tobacco Products Act, 2003.
2. Production of e-cigarettes is a cognizable offence under recently promulgated Prohibition of Electronic Cigarettes Ordinance, 2019.

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

- E-cigarettes are the most common form of **Electronic Nicotine Delivery Systems (ENDS)**. These are basically devices that do not burn or use tobacco leaves. Instead, they vaporise a solution using a battery. This vapour is then inhaled by the user.
- The main constituents of the solution, in addition to **nicotine** when nicotine is present, are **propylene glycol**, with or without glycerol and **flavouring agents**.
- Unlike traditional cigarettes, e-cigarettes do not contain tobacco and therefore are **not regulated under the Cigarettes and Other Tobacco Products Act, 2003**. Hence, statement 1 is not correct.
- President promulgated '**Prohibition of Electronic Cigarettes Ordinance, 2019**' which makes production, import, export, transport, sale or advertisements of e-cigarettes a **cognizable offence**.
 - First time violators will face a jail term of up to one year and a fine of one lakh rupees. For subsequent offences, there will be a jail term of up to three years or a fine of five lakh rupees or both. Hence, statement 2 is correct.

QUESTION 75:

The 'Keeladi' site which was in the news recently is related to:

- (a) A site where cultural deposits related to Sangam age were unearthed.
- (b) Capital city of Pandya rulers.
- (c) One of the important ancient port cities of Southern India.
- (d) Paleolithic site excavated in Malabar region.

Answer: (a)

Explanation

- According to a report published by the Tamil Nadu Archaeology Department (TNAD), the cultural deposits unearthed during the **excavations at site Keeladi located in the Sivaganga district** could be dated to a period between the 6th century BC and the 1st century AD.
- The title of the report was '**Keeladi-An Urban Settlement of Sangam Age on the Banks of River Vaigai**.' Hence, statement A is correct.
- The Pandya dynasty ruled in different phases from the Sangam age until the 16th century. Their capital city was Madura (now Madurai).

QUESTION 76:

With reference to 'Pradhan Mantri Kisan Maan – Dhan Yojana', consider the following statements:

1. It is voluntary and contributory for farmers in the entry age group of 18 to 40 years.

2. All Small and Marginal Farmers of age of 18-40 years are eligible.
3. A monthly pension of ₹3000 will be provided on attaining the age of 60 years.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

- Pradhan Mantri Kisan Maan-Dhan Yojana (PM-KMY) is an old age pension scheme for all land holding Small and Marginal Farmers (SMFs) in the country. It is a voluntary and contributory pension scheme for the entry age group of 18 to 40 years.
- Salient features:
 1. It is **voluntary and contributory for farmers in the entry age group of 18 to 40 years** and a **monthly pension of ₹3000/-** will be provided to them on attaining the age of 60 years. **Hence, statement 1 and 3 are correct.**
 2. The farmers will have to make a monthly contribution of ₹55 to ₹200, depending on their age of entry, in the Pension Fund till they reach the retirement date i.e. the age of 60 years.
 3. The beneficiaries may opt voluntarily to exit the Scheme after a minimum period of 5 years of regular contributions. On exit, their entire contribution shall be returned by LIC with an interest equivalent to prevailing saving bank rates.
- **Eligibility: Small and Marginal Farmer (SMF)** – a farmer who owns cultivable land upto 2 hectare as per land records of the concerned State/UT. But the following categories of farmers have been brought under the **exclusion criteria**:
 - SMFs covered under any other statutory social security schemes such as National Pension Scheme (NPS), Employees' State Insurance Corporation scheme, Employees' Fund Organization Scheme etc. **Hence, statement 2 is not correct**

QUESTION 77:

Which of the following leaf modifications occur(s) in the desert areas to inhibit water loss? (2018)

1. Hard and waxy leaves
2. Tiny leaves
3. Thorns instead of leaves

Select the correct answer using the code given below:

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

Answer: (d)

Explanation

- Most deserts have a considerable amount of specialized vegetation, as well as specialized vertebrate and invertebrate animals. Soils often have abundant nutrients because they need only water to become very productive and have little or no organic matter. Disturbances are common in the form of occasional fires or cold weather, and sudden, infrequent, but intense rains that cause flooding

- Temperatures exhibit daily extremes because the atmosphere contains little humidity to block the Sun's rays. Desert surfaces receive a little more than twice the solar radiation received by humid regions and lose almost twice as much heat at night. Mean annual temperatures range from 20-25°C. The extreme maximum temperature ranges from 43.5-49°C. Minimum temperature sometimes drop to -18°C
- Rainfall is usually very low and/or concentrated in short bursts between long rainless periods. Evaporation rates regularly exceed rainfall rates. Sometimes rain starts falling and evaporates before reaching the ground.
- Soils are coarse-textured, shallow, rocky or gravelly with good drainage and have no subsurface water. They are coarse because there is less chemical weathering. The finer dust and sand particles are blown elsewhere, leaving heavier pieces behind.
- The plants found in the desert are xerophytic plants which have special characteristics to withstand very high rate of evaporation. They have long roots, thick barks, waxy leaves, thorns and little leaves. The leaves are leathery and have a waxy substance on top to prevent water loss through the epidermis. Many xerophytic plants have small leaves and thorns. The tiny leaves, which are often circular in cross section, reduce the surface area and hence the evaporation from the surface. Spines protect the plant from animals, provide shade from the Sun and also collect moisture. **Hence, statements 1, 2 and 3 are correct.**

QUESTION 78:

Which one of the following is the best description of the term 'ecosystem'? (2015)

- (a) A community of organisms interacting with one another.
- (b) That part of the Earth which is inhabited by living organisms
- (c) A community of organisms together with the environment in which they live
- (d) The flora and fauna of a geographical area

Answer: (c)

Explanation

- The ecosystem is defined as a community of organisms together with their living environment. An ecosystem generally consists of biotic components (animals, plants, bacteria, etc.) and abiotic components, including minerals, climate, soil, water, sunlight, etc., linked through major forces of the flow of energy and geochemical cycles within the ecosystem. **Hence, option C is correct.**

QUESTION 79:

Which of the following statements best describes "carbon fertilization"? (2018)

- (a) Increased plant growth due to increased concentration of carbon dioxide in the atmosphere.
- (b) Increased temperature of Earth due to increased concentration of carbon dioxide in the atmosphere.
- (c) Increased acidity of oceans as a result of increased concentration of carbon dioxide in the atmosphere.
- (d) Adaptation of all living beings on Earth to the climate change brought about by the increased concentration of carbon dioxide in the atmosphere.

Answer: (a)

Explanation

- Carbon Fertilization can be defined as an **increased rate of photosynthesis** due to the large amount of carbon dioxide in the atmosphere that has resulted from rising anthropogenic emissions. Increased rate of photosynthesis results in increased plant growth. **Hence, option A is correct.**

QUESTION 80:

With reference to food chains in ecosystems, consider the following statements: (2013)

1. A food chain illustrates the order in which a chain of organisms feed upon each other.
2. Food chains are found within the populations of a species.
3. A food chain illustrates the numbers of each organism which are eaten by others.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 1 and 2 only
- (c) 1, 2 and 3
- (d) None

Answer: (a)

Explanation

- Species are a group of closely related organisms that are very similar to each other and are usually capable of interbreeding and producing fertile offspring.
- Food chain is a feeding hierarchy in which organisms in an ecosystem are grouped into trophic (nutritional) levels and are shown in a succession to represent the flow of food energy and the feeding relationships between them. **Hence, statement 1 is correct.**
 - Food chain covers all organisms in an ecosystem bypassing the taxonomic categories. **Hence, statement 2 is not correct.**
 - A food chain starts with primary producers such as plants which produce their own food, and proceed towards other organisms which are unable to produce their own food and thereby relies on other organisms such as herbivores, carnivores and apex predators.
 - The food chain is the straight and single pathway for the flow of energy in an ecosystem, through different species of organisms.
- Food web is defined as the convoluted or complicated pathway of an ecosystem which consists of numerous food chains of the different trophic levels as for survival, an organism feeds on different food chains. It illustrates the number of each organism which is eaten by others. Food chain does not illustrate the number of each organism being eaten by others. **Hence, statement 3 is not correct.**

QUESTION 81:

Consider the following pairs:

Governor-general

1. Lord Ripon
2. Lord Dalhousie
3. Lord Curzon

Act passed

- Appointment of Police Commission
- Widow Remarriage act
- Ancient Monuments Preservation Act

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

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

Answer: (c)

Explanation

- Lord Ripon 1880-1884:
 - Repeal of the Vernacular Press Act (1882)

- **The first Factory Act (1881)** to improve labour conditions
- Government resolution on local self-government (1882)
- Appointment of Education Commission under the chairmanship of Sir William Hunter. **Hence, pair 1 is not correctly matched.**
- **Second factory act (1891)** was passed during Lord Lansdowne (1888-1894)
- Lord Dalhousie (1848-1856):
 - Second Anglo-Sikh War (1848-49) and annexation of Punjab (1849).
 - Introduction of the Doctrine of Lapse and annexation of Satara (1848), Jaitpur and Sambalpur (1849), Udaipur (1852), Jhansi (1853), Nagpur (1854) and Awadh (1856).
 - Establishment of separate public works department in every province
 - **Widow Remarriage Act (1856)** Hence, pair 2 is correctly matched.
- Lord Curzon (1899-1905):
 - **Appointment of Police Commission (1902)** under Sir Andrew Frazer to review police administration
 - Appointment of Universities Commission (1902) and passing of Indian Universities Act (1904)
 - Calcutta Corporation Act (1899)
 - **Ancient Monuments Preservation Act (1904).** Hence, pair 3 is correctly matched.

QUESTION 82:

With reference to 'Mappila Revolt', consider the following statements:

1. The Mappila were the Muslim tenants inhabiting the Malabar region.
2. The movement against the landlords acquired communal overtones in the later phase.
3. The leaders of Khilafat-Non-Cooperation Movement were aloof from the Mappila movement.

Which of the statements given above is/are correct?

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

Answer: (a)

Explanation

- The Mappilas were the **Muslim tenants inhabiting the Malabar region** where most of the landlords were Hindus. The Mappilas had expressed their **resentment against the oppression of the landlords** during the nineteenth century also. Their grievances centred around lack of security of tenure, high rents, renewal fees and other oppressive exactions. **Hence, statement 1 is correct.**
 - The Mappila tenants were particularly encouraged by the demand of the local Congress body for a government legislation regulating tenant-landlord relations. Soon, the Mappila movement merged with the ongoing Khilafat agitation.
 - The leaders of the **Khilafat-Non-Cooperation Movement** like Gandhi, Shaukat Ali and Maulana Azad addressed Mappila meetings. After the arrest of national leaders, the leadership passed into the hands of local Mappila leaders. **Hence, statement 3 is not correct.**
- Things took a turn for the worse in August 1921 when the arrest of a respected priest leader, Ali Musaliar, sparked off large-scale riots. Initially, the symbols of British authority – courts, police stations, treasuries and offices – and unpopular landlords (mostly Hindus) were the targets.
 - The British declared **martial law and repression began in earnest, the character of the rebellion underwent a definite change.** Many Hindus were seen by the Mappilas to be helping the authorities. What began as an **anti government and anti-landlord affair acquired communal overtones.**

- The communalisation of the rebellion completed the isolation of the Mappilas from the Khilafat-Non-Cooperation Movement. By December 1921, all resistance had come to a stop. **Hence, statement 2 is correct.**

QUESTION 83:

Regarding the 'All India Kisan Sabha (AIKS)', consider the following statements:

1. AIKS was founded in Faizpur with Swami Sahajanand as the President.
2. Indian National Congress did not support AIKS's formation.
3. Kisan Manifesto of the AIKS influenced the Congress manifesto for the 1937 provincial elections.

Which of the following statements given above is/are correct?

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

Answer: (c)

Explanation

- The formation of an all-India body to coordinate the Kisan movement, a process that was already underway through the efforts of N.G. Ranga and other Kisan leaders led to the establishment of the **All-India Kisan Congress in Lucknow in April 1936** which later changed its name to the All-India Kisan Sabha. **Swami Sahajanand was elected the President, and N.G. Ranga, the General Secretary. Hence, Statement 1 is not correct.**
- Congress did not show any displeasure on its formation. Even the first session was **greeted in person by several Congress leaders like Jawaharlal Nehru**. The Kisan Manifesto was finalized at the All-India Kisan Committee session in Bombay and formally presented to the Congress Working Committee to be incorporated into its forthcoming manifesto for the 1937 elections. **Hence, Statement 2 is not correct.**
 - The Kisan Manifesto **considerably influenced the agrarian programme adopted by the Congress at its Faizpur session**, which included demands for fifty per cent reduction in land revenue and rent, a moratorium on debts, the abolition of feudal levies, security of tenure for tenants, a living wage for agricultural labourers, and the recognition of peasant unions. **Hence, Statement 3 is correct.**

QUESTION 84:

Consider the following pairs:

Peasant movement	Leader Associated
1. Indigo Revolt	Bishnu Biswas
2. Eka movement	Gauri Shankar
3. Bardoli Satyagraha	Madari Pasi
4. Kisan Sabha movement	Gauri Shankar Mishra

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

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

Answer: (d)

Explanation

- In Bengal, the indigo planters, nearly all Europeans, exploited the local peasants by forcing them to grow indigo on their lands instead of the more paying crops like rice. The planters forced the peasants to take advance sums and enter into fraudulent contracts which were then used against the peasants.
 - The anger of the peasants exploded in 1859 when **led by Digambar Biswas and Bishnu Biswas** of Nadia district, they decided not to grow indigo under duress and resisted the physical pressure of the planters and their lathiyals (retainers) backed by police and the courts. **Hence, Pair 1 is correctly matched.**
- Towards the end of 1921, peasant discontent resurfaced in some northern districts of the United Provinces – Hardoi, Bahraich, Sitapur which led to the Eka or Unity movement. The grassroots **leadership of the Eka Movement came from Madari Pasi and other low-caste leaders**, and many small zamindars.
- The movement sparked off in January 1926 when the authorities decided to increase the land revenue by 30 per cent. The Congress leaders were quick to protest and a Bardoli Inquiry Committee was set up to go into the issue.
 - The committee found the revenue hike to be unjustified. In February 1926, **Vallabhbhai Patel was called to lead the movement**. The women of Bardoli gave him the title of “Sardar”.
- The majority of the cultivators in Awadh were subjected to high rents, summary evictions (bedakhali), illegal levies, renewal fees or nazrana. The First World War had hiked the prices of food and other necessities. This worsened the conditions of the UP peasants.
 - The United Provinces Kisan Sabha was set up in February 1918 by Gauri Shankar Mishra and Indra Narayan Dwivedi. Later, it's faction Awadh Kisan Sabha led the movement. **Hence, Pair 4 is correctly matched.**

QUESTION 85:

What were the common characteristics of tribal movements in India:

1. Ethnic ties were a basic feature of the tribal rebellions.
2. They dedicated themselves to fight the war and did not believe in magical powers.
3. Most of the tribal movements were regional in their expanse.

Select the correct answer using the codes given below:

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

Answer: (b)

Explanation

- The **ethnic ties were a basic feature of the tribal rebellions**. The rebels saw themselves not as a discrete class but as having a tribal identity. At this level, the solidarity shown was of a very high order. Fellow tribals were never attacked unless they had collaborated with the enemy.
 - At the same time, not all outsiders were attacked as enemies. Often there was no violence against the non-tribal poor, who worked in tribal villages in supportive economic roles, or who had social relations with the tribals such as telis, gwalas, lohars, carpenters, potters, weavers, washermen, barbers, drummers, and bonded labourers and domestic servants of the outsiders. **Hence, Statement 1 is correct**
- Movements were conspicuous by the religious and charismatic leaders – messiahs emerged and promised divine intervention and an end to their suffering at the hands of the outsiders, and asked their fellow tribals to rise and rebel against foreign authority

- Most of these leaders claimed to derive their authority from God. They also often claimed that they possessed magical powers, for example, the power to make the enemies' bullets ineffective. Filled with hope and confidence, the tribal masses tended to follow these leaders to the very end. **Hence, Statement 2 is not correct**
- Most of the tribal **movements were local and regional in their expanse**. Among the numerous tribal revolts, the Santhal hool or uprising was the most massive. The Santhals, who live in the area between Bhagalpur and Rajmahal, known as Daman-i-koh, rose in revolt. **Hence, Statement 3 is correct**

QUESTION 86:

Consider the following statements with reference to Morley-Minto reforms?

1. The reforms introduced a separate electorate for Muslims and Sikhs.
2. Most of the elected members in the Imperial Legislative Council were elected indirectly.
3. Inclusion of an Indian in viceroy's executive council.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation

- The **Indian Councils Act of 1909** also known as **Morley-Minto Reforms** increased the number of elected members in the Imperial Legislative Council and the provincial legislative councils. Most of the **elected members were still elected indirectly**. **Hence, statement 2 is correct.**
- Of the sixty-eight members of the Imperial Legislative Council, thirty-six were officials and five were nominated non-officials. Out of twenty-seven elected members, six were elected by big landlords and two by British capitalists.
- The Act permitted members to introduce resolutions; it also increased their power to ask questions.
 - Voting on separate budget items was allowed. But the reformed councils still enjoyed no real power and remained mere advisory bodies.
 - **An Indian was to be appointed a member of the Governor-General's Executive Council. Hence, statement 3 is correct.**
- The Reforms introduced the system of **separate electorates** under which **Muslims could only vote for Muslim candidates** in constituencies specially reserved for them.
 - This was done to encourage the notion that the political, economic and cultural interests of Hindus and Muslims were separate and not common.
 - The institution of separate electorates was one of the poisonous trees which was to yield a bitter harvest in later years.
 - In the **Government of India Act 1919**, the communal representation was extended and **Sikhs, Europeans and Anglo-Indians**. **Hence, statement 1 is not correct.**

QUESTION 87:

With reference to Government of India Act, 1919, consider the following statements:

1. Dyarchy was introduced in the central government while the bicameral legislature was introduced in the provincial government.
2. Women were given the right to vote for Provincial legislative councils.
3. Devolution of legislative authority by the centre to the provinces.

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

- The Government of India Act, 1919 **introduced dyarchy for the executive at the level of the provincial government. Hence, statement 1 is not correct.**
- **Dyarchy**, i.e., **rule of two** – executive councillors and popular ministers – was introduced. The Governor was to be the executive head in the province.
- Subjects were divided into two lists:
 - **Reserved List:** They were to be administered by the governor through his executive council of bureaucrats.
 - **Transferred List:** They were to be administered by **ministers** nominated from among the elected members of the legislative council.
- Provincial legislative councils were further expanded and 70 per cent of the members were to be elected. And women were also given the right to vote. **Hence, statement 2 is correct.**
- There was devolution of legislative authority by the centre to the provinces. The **Provincial legislative councils could initiate legislation** but the governor's assent was required. The governor could veto bills and issue ordinances. **Hence, statement 3 is correct.**

QUESTION 88:

Consider the following events:

1. Formation of East India Association
2. Vernacular Press Act
3. Ilbert Bill
4. Formation of Indian League

Which of the following is the correct chronological sequence of the above events?

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

Answer: (c)

Explanation

- The **East India Association** was **founded by Dadabhai Naoroji in 1866**, in collaboration with Indians and retired British officials in London.
 - It superseded the London Indian Society and was a platform for discussing matters and ideas about India, and to provide representation for Indians to the Government.
- The noted journalist **Sisir Kumar Ghosh** had started the **Indian League** in Calcutta in **1875**. Its main aim was to develop the feeling of nationalism among the common people.
 - Sisir Kumar Ghosh was the founder of the **Amrita Bazar Patrika**, a Bengali language newspaper in 1868 and a freedom fighter from Bengal.
- **Vernacular Press Act of 1878**, proposed by Lytton the then Viceroy of India (1876-80). It was also known as Gagging Act and it was meant only for vernacular/native language newspaper not for English ones.

- **Ilbert Bill** was a controversial measure **proposed in 1883** that sought to allow senior Indian magistrates to preside over cases involving British subjects in India. The bill, severely weakened by compromise, was enacted by the **Indian Legislative Council in 1884**.
- **Hence, option C is correct.**

QUESTION 89:

With reference to the 'Pitt's India Act of 1784', consider the following statements:

1. The Board of Control to exercise control over civil, military and revenue affairs of the Company was created.
2. The presidencies of Bombay and Madras were made subordinate to the governor-general.

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 **Pitt's India Act, 1784** gave the British government a large measure of control over the Company's affairs. In fact, the Company became a **subordinate department of the State**.
 - The Company's territories in India were termed 'British possessions'.
- The government's control over the Company's affairs was greatly extended. A **Board of Control** consisting of the chancellor of the exchequer, a secretary of state and four members of the Privy Council (to be appointed by the Crown) were **to exercise control over the Company's civil, military and revenue affairs. Hence, statement 1 is correct.**
 - All dispatches were to be approved by the board. Thus a dual system of control was set up.
- In India, the governor-general was to have a council of three (including the commander-in-chief), and **the presidencies of Bombay and Madras were made subordinate to the governor-general.**
 - A general prohibition was placed on aggressive wars and treaties (breached often). **Hence, statement 2 is correct.**

QUESTION 90:

Consider the following statements:

1. Subhash Chandra Bose was unanimously elected president of this session.
2. The idea of economic development of the country through planning was discussed.
3. Sending of a Medical Mission to China was approved by Indian National Congress.

Which of the following statements given above is/are correct regarding Haripura Session of Indian National Congress?

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

Answer: (a)

Explanation

- At the Congress meeting in Haripura, Gujarat, in February 1938, **Subhash Chandra Bose was unanimously elected president of the session**. He was firm in his belief that the Congress ministries

in the provinces had immense revolutionary potential, as he said in his presidential address. **Hence, statement 1 is correct.**

- Bose also talked of economic development of the country through planning and was instrumental in setting up a National Planning Committee later. **Hence, statement 2 is correct.**
- The session adopted a resolution that Congress would give moral support to those who were agitating against the governance in the princely states.
- In the following months, the international situation was highly disturbed; there were clear signs that Europe was going to be embroiled in war.
- The Indian National Congress at **Tripuri session, 1939** passed a resolution relating to China:
 - The Congress sends its greetings to the people of China and its deepest sympathy in their trials and privations in their struggle against ruthless and inhuman imperialism. It congratulates them on their heroic resistance.
 - The **Congress expresses its approval of the sending of a Medical Mission** on its behalf to the **people of China and trusts that this Mission** will continue to receive full support so that it may carry on its work of succour effectively and be a worthy symbol of Indian solidarity with China. **Hence, statement 3 is not correct.**

QUESTION 91:

Recently in the news poly-Oxime gel is used for which of the following purposes?

- (a) Protect farmers from Pesticides
- (b) To reverse desertification
- (c) Treat Burn Victims
- (d) Carbon Sequestration

Answer: (a)

Explanation

- Researchers at **Institute for Stem Cell Science & Regenerative Medicine**, Bengaluru, developed **poly-Oxime gel** that deactivates toxic chemicals, preventing them from going deep into skin, organs. Indian farmers usually do not wear any protective gear while spraying chemicals in fields. This exposes them to harmful toxics contained in pesticides, causing severe health impacts and even death in extreme cases. Indian scientists have now developed a protective gel to address this problem.
- The gel can be applied on skin and can break down toxic chemicals in pesticides, insecticides and fungicides including the most hazardous and widely used **organo phosphorous compounds**. The gel deactivates these chemicals, preventing them from going deep into the skin and organs like the brain and the lungs. It has been found to be effective in tests done in rats and researchers hope to soon test it in humans.
- Exposure to chemicals contained in pesticides interferes with an enzyme called **acetylcholinesterase (AChE)** which is present in the nervous system and is critical for neuromuscular functions. When its functioning is disrupted by chemical pesticides entering the body through the skin, it can cause neurotoxicity, cognitive dysfunction and even death in severe cases. When the gel was applied on rats and they were exposed to a lethal dose of pesticide MPT, it did not lead to any change in their AChE level, showing it could prevent penetration of the pesticide into the skin. **Hence, option (a) is correct.**

QUESTION 92:

Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. What are the possible applications of AI?

1. It can help in reducing social crimes.

2. It can help in boosting the Indian economy.
3. It can play a role in tackling environmental pollution.

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 only

Answer: (d)

Explanation

- AI can be used in ensuring better policing. India still has conventional policing. AI-based products open a new window of opportunity to do predictive policing in India. With the help of AI, one can **predict the pattern of crime**, analyze a lot of CCTV footage which are available across the country to identify suspects.
 - Government is digitizing all the records, especially the crime records putting it into one single place called CCTNS where all the data including the image, biometrics, or the criminal history of a convict or suspect is available. **Hence, statement 1 is correct.**
- AI can help in increasing productivity and production of agriculture crop yields, efficiency in industrial output, bring innovation and start-up systems and thus, can help in increasing the economic outcome. **Hence, Statement 2 is correct.**
- Air pollution, water pollution, sanitation, etc. are all contributors to environmental degradation and are the primary causes of widespread diseases impacting livelihood in India. AI can address many such issues –
 - It can estimate and control at source, the pollution level of smoke, effluents and solid waste released into the air, soil and water.
 - It can predict meteorological events such as cyclones, floods and natural disasters due to climatic or other anthropogenic changes.
 - It can predict depletion of non-renewable natural resources, green cover and endangered species. **Hence, statement 3 is correct.**

QUESTION 93:

Ballistic and cruise missiles are two popular missile systems. Consider the following statements in relation to these:

1. While Ballistic missiles follow a parabolic trajectory, cruise missiles follow an extremely low-altitude trajectory.
2. Ballistic missiles are classified by speed while Cruise missiles are categorized by the maximum distance.
3. Brahmos is an operationally deployed hypersonic cruise missile.

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: (a)

Explanation

- Ballistic missiles are powered by rockets initially but then they follow an unpowered, free-falling ballistic (parabolic) trajectory toward their targets after tracing well outside the atmosphere.

- A cruise missile is a guided missile used against terrestrial targets, that remains in the atmosphere and flies the major portion of its flight path at an approximately constant speed and follows a non-ballistic and extremely low-altitude trajectory. **Hence, statement 1 is correct**
- Ballistic missiles are classified by the maximum distance that they can travel, which is a function of how powerful the missile's engines (rockets) are and the weight of the missile's payload. There are four general classifications of ballistic missiles:
 - **Short-range** ballistic missiles, travelling less than 1,000 kilometres; **Medium-range ballistic missiles**, travelling between 1,000–3,000 kilometres; **Intermediate-range ballistic missiles**, travelling between 3,000–5,500 kilometres; and **Intercontinental ballistic missiles (ICBMs)**, travelling more than 5,500 kilometres.
 - Cruise missiles can be categorized by size, **speed (subsonic or supersonic)**, and range (short-range, medium-range and long-range subsonic), and whether launched from land, air, surface ship, or submarine. **Hence, statement 2 is not correct.**
- Brahmos is India's **medium-range supersonic cruise missile**. It is one of the fastest cruise missiles currently operationally deployed with speed of Mach 2.8, which is around 3 times more than the speed of sound.
 - **A hypersonic version of the missile, BrahMos-II**, is presently under development with a speed of Mach 7-8 to boost aerial fast strike capability. It is expected to be ready for testing by 2020. **Hence, statement 3 is not correct.**

QUESTION 94:

Consider the following statements:

1. Spent Pot Lining (SPL) has been classified as a hazardous waste under the Hazardous Waste Management Rules, 2016.
2. Spent Pot Lining is produced by the smelting plants and can cause Silicosis disease.
3. Spent Pot Lining is produced from **smelting plants in aluminium industries**.

Which of the statements given above is/are correct?

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

Answer: (a)

Explanation

- The **National Green Tribunal (NGT)** held a hearing regarding scientific disposal of Spent Pot Lining (SPL) from the **aluminium industries**.
- Spent Pot Lining has been classified as a **hazardous waste under the Hazardous Waste Management Rules, 2016**. **Hence, statement 1 is correct.**
- Spent Potlining is also known as Spent Pot liner and Spent Cell Liner.
 - Most SPL is currently stored at the **aluminium smelter sites** or placed in landfills. Dissolved fluorides and cyanides from SPL landfill leachate may have environmental impacts. **Hence, statement 3 is correct.**
- Spent Pot Lining is produced by the smelting plants and contains a **high level of cyanide and fluoride** and is **carcinogenic in nature** and must be scientifically utilised or detoxified.
 - **Silicosis is a lung disease** caused by breathing in tiny bits of silica, a mineral that is part of sand, rock, and mineral ores such as quartz.
 - It mostly affects workers exposed to silica dust in occupations such as mining, glass manufacturing, and foundry work. **Hence, statement 2 is not correct.**

QUESTION 95:

The term 'Utkarsh 2022', sometimes mentioned in the news is-

- (a) A roadmap to improve regulation and supervision, among other functions of the RBI.
- (b) A midterm strategy to increase water use efficiency in agriculture.
- (c) NITI Aayog's comprehensive national Strategy for New India, which defines clear objectives for 2022-23.
- (d) Ministry of Skill Development & Entrepreneurship (MSDE's) roadmap to enable Indian youths to take up industry-relevant skills training.

Answer: (a)

Explanation

- **Utkarsh 2022** is a medium-term strategy in line with the global central banks' plan to strengthen the regulatory and supervisory mechanism. This specifically includes the RBI's proactive role to avoid any other IL&FS debt default issue in future. **Hence, option A is correct.**

QUESTION 96:

With reference to the West Nile Virus, consider the following statements:

1. It causes a fatal neurological disease in humans.
2. It is transmitted through contact with infected animals.

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

- **West Nile Virus** found in Africa, Europe, the Middle East, North America and West Asia, is a viral infection which is typically **spread by mosquitoes** and can cause neurological disease as well as death in people. **Hence, statement 1 is correct.**
- It was first identified in the West Nile district of **Uganda in 1937** and then identified in birds in the Nile delta region.
- The virus can be **injected into humans and animals** and can also be transmitted through contact with other infected animals, their blood or tissues. **Hence, statement 2 is correct.**

QUESTION 97:

Satya Shodhak Samaj organized (2016)

- (a) a movement for upliftment of tribals in Bihar
- (b) a temple-entry movement in Gujarat
- (c) an anti-caste movement in Maharashtra
- (d) a peasant movement in Punjab

Answer: (c)

Explanation

- Satya Shodhak Samaj or Truth Seekers' Society was founded by Jyotirao Phule in 1873. The leaders of the Society came from backward classes – Malis, Telis, Kunbis, Saris and Dhangars.

- It was founded with an objective to liberate the Shudras and Ati Shudras, and to prevent their exploitation by the upper caste.
- It refused to regard the Vedas as sacrosanct, opposed idol worship, denounced the Chaturvarnya system (the caste system) and rejected the need for a Brahman priestly class as educational and religious leaders.
- The existence of God was replaced by Nirmik. Deenbandhu was the name of the mouthpiece of the Satya Shodhak Samaj.
- It also emphasised on social service, and spread of education among women and lower caste people.
- Jyotirao Phule along with his wife Savitri Phule opened a girls' school at Poona. He was a pioneer of the Widow Remarriage Movement in Maharashtra and also opened a home for widows in 1854. Phule was also awarded with the title of 'Mahatma' in 1808, for his social reform work. **Hence, option (c) is correct.**

QUESTION 98:

Consider the following:

1. Calcutta Unitarian Committee
2. Tabernacle of New Dispensation
3. Indian Reform Association

Keshab Chandra Sen is associated with the establishment of which of the above?

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

Answer: (b)

Explanation

- **Keshab Chandra Sen** was a well-known Bengali scholar and social reformer. He was the member of Bramho Samaj and in 1866 founded his own Brahmo Samaj of India after breaking away from the original Brahmo Samaj.
- He laid the foundation stone of his new church – **the Tabernacle of New Dispensation** on 24th January 1868.
- He also established **the Indian Reform Association** on 29th October 1870. The Indian Reform Association represented the secular side of the Brahmo Samaj. **The Calcutta Unitarian Committee** was founded in 1823 by **Raja Rammohan Roy, Dwarka Nath Tagore and William Adam.**
- **Hence, option B is correct.**

QUESTION 99:

Consider the following statements:

1. The "Bombay Manifesto" signed in 1936 openly opposed the preaching of socialist ideals.
2. It evoked support from a large section of the business community from all across 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: (a)

Explanation

- Bombay Manifesto was released by 21 prominent Indian businessmen and industrialists against Jawaharlal Nehru's speech in the 1936 Lucknow Session of Congress which called for socialism as the panacea for ending poverty and inequality in India.
- **The Manifesto was signed in 1936 and openly opposed the preaching of socialist ideals** in Indian society. **Hence, statement 1 is correct.**
- **None of the sections of the business community supported it.** However, it strengthened the hands of the moderates like Bhulabhai Desai and G.B. Pant who pressurized Nehru not to further his socialist ideas. **Hence, statement 2 is not correct.**
- **Therefore, option (a) is the correct answer.**

QUESTION 100:

With reference to the period of colonial rule in India, "Home Charges" formed an important part of the drain of wealth from India. Which of the following funds constituted "Home Charges"?

1. Funds used to support the Indian Office in London.
2. Funds used to pay salaries and pensions of British personnel engaged in India.
3. Funds used for waging wars outside India by the British.

Select the correct answer using the codes given below:

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

Answer: (b)

Explanation

- Home Charges were a type of contributions used by the British to meet various types of expenses for maintenance of their colony in India.
- It mainly consisted of:
 - Interest on public debt raised in England at comparatively higher rates.
 - **Expenditure incurred in England by the Secretary of State on behalf of India.**
 - Annuities on account of railway and irrigation works.
 - **The payments of the salaries and pensions of British officials in the civil and military departments in India.**
- **Hence, option B is correct.**