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## ANSWERS & EXPLANATIONS

### PRAYATNA TEST - 3767

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1. (b)

- As the **Delhi Sultans** brought the hinterland of the cities under their control, they forced the **landed chieftains – the samanta aristocrats** – and rich landlords to accept their authority.
- Under Alauddin Khalji the state brought the assessment and collection of land revenue under its own control. The rights of the local chieftains to levy taxes were cancelled and they were also forced to pay taxes.

2. (c)

- With the establishment of the Delhi Sultanate, several major Sufi centres developed all over the subcontinent. The **Chishti silsila** was among the most influential orders. It had a long line of teachers like **Khwaja Muinuddin Chishti of Ajmer, Qutbuddin Bakhtiar Kaki of Delhi, Baba Farid of Punjab, Khwaja Nizamuddin Auliya of Delhi and Bandanawaz Gisudaraz of Gulbarga.**

3. (b)

- **The city of Lothal stood beside a tributary of the Sabarmati, in Gujarat, close to the Gulf of Khambhat.** It was situated near areas where raw materials such as semi-precious stones were easily available. This was an important centre for making objects out of stone, shell and metal. There was also a storehouse in the city. Many seals and sealings (the impression of seals on clay) were found in this storehouse.
- **A dockyard was found at Lothal.** This huge tank may have been a dockyard, where boats and ships came in from the sea and through the river channel. Goods were probably loaded and unloaded here.

4. (c)

- By the 1890s many Indians began to raise questions about the political style of the Congress. In Bengal, Maharashtra and Punjab, leaders such as Bepin Chandra Pal, Bal Gangadhar Tilak and Lala Lajpat Rai were beginning to explore more radical objectives and methods. They criticised the Moderates for their “politics of prayers”, and emphasised the importance of self-reliance and constructive work. They argued that people must rely on their own strength, not on the “good” intentions of the government; people must fight for swaraj. **Tilak raised the slogan, “Freedom is my birthright and I shall have it!”**

5. (c)

- **Thanjavur**
  - It was the capital of the Cholas, as it was a thousand years ago. The perennial river Kaveri flows near this beautiful town.
  - It houses the Rajarajeshvara temple built by King Rajaraja Chola. Besides the temple, there are palaces with mandapas or pavilions.
  - **The town is bustling with markets selling grain, spices, cloth and jewellery. The Saliya weavers of Thanjavur and the nearby town of Uraiyur produce cloth for flags to be used in the temple festival, fine cottons for the king and nobility and coarse cotton**

**for the masses.** Some distance away at Svamimalai, the sthapatis or sculptors are making exquisite bronze idols and tall, ornamental bell metal lamps.

6. (a)

- By the time the first English arrived at the west coast of Africa, round the Cape of Good Hope, and crossed the Indian Ocean, the Portuguese had already established their presence in the western coast of India, and had their base in Goa.
- In fact, it was **Vasco da Gama, a Portuguese explorer, who had discovered this sea route to India in 1498.** Hence Portuguese were the earliest to arrive.
- By the early seventeenth century, the Dutch too were exploring the possibilities of trade in the Indian Ocean. Soon the French traders arrived on the scene.
- Hence **Portuguese were the first to arrive followed by Dutch and then French.**

7. (a)

- **Different varieties of cloth were in use during British times.** Amongst the pieces ordered in bulk were printed **cotton cloths called chintz, cossaes (or khassa) and bandanna.** Hence, option (a) is the correct answer.
- Chintz is derived from the Hindi word chhint, a cloth with small and colourful flowery designs. From the 1680s there started a craze for printed Indian cotton textiles in England and Europe mainly for their exquisite floral designs, fine texture and relative cheapness. Rich people of England including the Queen herself wore clothes of Indian fabric.
- Similarly, the word bandanna now refers to any brightly coloured and printed scarf for the neck or head. Originally, the term derived from the word “bandhna” (Hindi for tying), and referred to a variety of brightly coloured cloth produced through a method of tying and dying.

8. (d)

- The most famous Kushana ruler was Kanishka. He organised a Buddhist council, where scholars met and discussed important matters. **Ashvaghosha, a poet who composed a biography of the Buddha, the Buddhacharita, lived in his court. Ashvaghosha and other Buddhist scholars now began writing in Sanskrit.**

9. (b)

- The value of **final goods and services** produced in each sector during a particular year provides the total production of the sector for that year. And the **sum of production in the three sectors gives what is called the Gross Domestic Product (GDP) of a country.** It is the value of all final goods and services produced within a country during a particular year.
- Take, for instance, a farmer who sells wheat to a flour mill for Rs 100. The mill grinds the wheat and sells the flour to a biscuit company for Rs 120. The biscuit company uses the flour and things such as sugar and oil to make four packets of biscuits. It sells biscuits in the market to the consumers for Rs 160. Biscuits are the final goods, i.e., goods that reach the consumers. GDP in this situation would be Rs 160.
- *In contrast to final goods, goods such as wheat and the wheat flour in this example are intermediate goods. Intermediate goods are used up in producing final goods and services. The value of final goods already includes the value of all the intermediate goods that are used in making the final good. Hence, the value of Rs 160 for the biscuits (final good) already includes the value of flour (Rs 100). Similarly, the value of all other intermediate goods would have been included.*

10. (d)

- **United Nations Development Programme (Human Development Report).**

11. (b)

- **Infant Mortality Rate (or IMR)** indicates the number of children that die before the age of **one year as a proportion of 1000 live children** born in that particular year. Hence, statement 1 is not correct.

- Literacy Rate measures the proportion of literate population in the 7-and-above age group.
- **Net Attendance Ratio** is the total number of children of **age group 14 and 15 years** attending school as a percentage of total number of children in the same age group. Hence, statement 2 is correct.

12. (d)

- The farmers are paid a pre-announced price for their crops. This price is called Minimum Support Price (MSP). **The MSP is declared by the government every year before the sowing season** to provide incentives to farmers for raising the production of these crops. The purchased foodgrains are stored in granaries.
- Buffer Stock is the stock of foodgrains, namely wheat and rice, procured by the government through the Food Corporation of India (FCI). The FCI purchases wheat and rice from the farmers in states where there is surplus production.
- **Hence both the statements are not correct.**

13. (c)

- When we produce a good by exploiting natural resources, it is an activity of the primary sector. This is because it forms the base for all other products that we subsequently make. Since most of the natural products we get are from agriculture, dairy, fishing, forestry, this sector is also called agriculture and related sectors.
- The secondary sector covers activities in which natural products are changed into other forms through ways of manufacturing that we associate with industrial activity. It is the next step after primary. The product is not produced by nature but has to be made and therefore some process of manufacturing is essential. This could be in a factory, a workshop or at home. For example, using cotton fibre from the plant, we spin yarn and weave cloth. Using sugarcane as a raw material, we make sugar or gur. We convert earth into bricks and use bricks to make houses and buildings. Since this sector gradually became associated with the different kinds of industries that came up, it is also called the industrial sector. Hence option 2 is not correct.
- **Tertiary activities are those that help in the development of the primary and secondary sectors.**
- These activities, by themselves, do not produce a good but they are an aid or a support for the production process. For example, goods that are produced in the primary or secondary sector would need to be **transported** by trucks or trains and then sold in wholesale and retail shops. At times, it may be necessary to **store these in godowns**. We also may need to talk to others over the **telephone or send letters (communication)** or **borrow money from banks (banking)** to help production and trade. **Transport, storage, communication, banking, trade are some examples of tertiary activities.** Hence option 1 is correct.
- Since these activities generate services rather than goods, the **tertiary sector is also called the service sector**. Service sector also includes some essential services that may not directly help in the production of goods. For example, we require **teachers, doctors, and those who provide personal services such as washermen, barbers, cobblers, lawyers, and people to do administrative and accounting works.**
- In recent times, certain new services based on **information technology** such as internet cafes, ATM booths, call centres, software companies etc have become important. Hence option 3 is correct.

14. (b)

- The given situation describes a case of underemployment, where people are apparently working but all of them are made to work less than their potential.
- This kind of underemployment is hidden in contrast to someone who does not have a job and is clearly visible as unemployed. Hence, it is also called disguised unemployment. **Hence, option (b) is the correct answer.**

15. (c)

- Double Coincidence of Wants is an economic phenomenon where two parties each hold an item the other wants, so they exchange these items directly without any monetary medium. **Hence, option (c) is the correct answer.**
- Double coincidence of wants is an essential feature of the barter system where goods are directly exchanged without the use of money.

16. (d)

- When we buy any commodity, we can find certain details given on the packaging. These details are about ingredients used, price, batch number, date of manufacture, expiry date and the address of the manufacturer. When we buy medicines, on the packets, you might find 'directions for proper use' and information relating to side effects and risks associated with usage of that medicine.
- Consumers have the right to be informed about the particulars of goods and services that they purchase. Consumers can then complain and ask for compensation or replacement if the product proves to be defective in any manner. **Hence option 1 is correct.**
- Any consumer who receives a service in whatever capacity, regardless of age, gender and nature of service, has the right to choose whether to continue to receive the service. **Hence option 2 is correct.**
- Suppose you want to buy toothpaste, and the shop owner says that she can sell the toothpaste only if you buy a toothbrush. If you are not interested in buying the brush, your right to choice is denied.
- Consumers have the right to seek redressal against unfair trade practices and exploitation. If any damage is done to a consumer, she has the right to get compensation depending on the degree of damage. **Hence option 3 is correct.**

17. (d)

- **Test for carbohydrates**
  - There are many types of carbohydrates. The main carbohydrates found in our food are in the form of starch and sugars. We can easily test if a food item contains starch.
  - Take a small quantity of a food item or a raw ingredient. Put 2-3 drops of dilute iodine solution on it. A blue-black colour indicates that it contains starch. **Hence, pair 1 is correctly matched.**
- **Test for Protein**
  - Take a small quantity of a food item for testing. If the food you want to test is a solid, you first need to make a paste of it or powder it.
  - Grind or mash a small quantity of the food item. Put some of this in a clean test tube, add 10 drops of water to it and shake the test tube. Now, using a dropper, add two drops of solution of copper sulphate and ten drops of solution of caustic soda to the test tube. Shake well and let the test tube stand for a few minutes. A violet colour indicates the presence of proteins in the food item. **Hence, pair 2 is correctly matched.**
- **Test for Fats**
  - Take a small quantity of a food item. Wrap it in a piece of paper and crush it.
  - An oily patch on paper shows that the food item contains fat. The food items may sometimes contain a little water. Therefore, after you have rubbed an item on paper, let the paper dry for a while. If there were any water that may have come from food, it would dry up after some time. If no oily patch shows up after this, the food item does not contain any fat. **Hence, pair 3 is correctly matched.**

18. (a)

**Table 2.3 – Some diseases/disorders caused by deficiency of vitamins and minerals**

Vitamin/Mineral	Deficiency disease/disorder	Symptoms
Vitamin A	Loss of vision	Poor vision, loss of vision in darkness (night), sometimes complete loss of vision
Vitamin B1	Beriberi	Weak muscles and very little energy to work
Vitamin C	Scurvy	Bleeding gums, wounds take longer time to heal
Vitamin D	Rickets	Bones become soft and bent
Calcium	Bone and tooth decay	Weak bones, tooth decay
Iodine	Goiter	Glands in the neck appear swollen, mental disability in children
Iron	Anaemia	Weakness

19. (c)

- There may be lighter impurities in a mixture like dust or soil particles in rice or pulses.
- When the heavier component in a mixture settles after water is added to it, the process is called **sedimentation**.
- When the water (along with the dust) is removed, the process is called **decantation**. Hence, option (c) is the correct answer.
- The same principle is used for separating a mixture of two liquids that do not mix with each other.
- The process that is used to separate grain from stalks etc. is **threshing**.
- **Winnowing** is used to separate heavier and lighter components of a mixture by wind or by blowing air.

20. (a)

- **A switch is a simple device that either breaks the circuit or completes it.** The switches used in lighting of electric bulbs and other devices in homes work on the same principle although their designs are more complex.

21. (b)

- Sea animals have streamlined bodies to help them move easily in water.
- There are some sea animals like squids and octopus, which do not have this streamlined shape. They stay deeper in the ocean, near the seabed and catch any prey that moves towards them. However, when they move in water they make their body shapes streamlined. These animals have gills to help them use oxygen dissolved in water.
- There are **some sea animals like dolphins and whales that do not have gills**. They breathe in air through nostrils or blow holes that are located on the upper parts of their heads. This allows them to breathe in air when they swim near the surface of water. They can stay inside the water for a long time without breathing. They come out to the surface from time to time, to breathe in air.
- **Hence, option (b) is the correct answer.**

22. (c)
- Certain rocks have been discovered with the property of attracting pieces of iron. Such small pieces of these rocks have some special properties. They are called naturally occurring materials magnets.
  - Gradually, the process of making magnets from pieces of iron evolved and these are known as artificial magnets.
  - A freely suspended bar magnet always comes to rest in a particular direction, which is the North-South direction. **Hence, statement 1 is correct.**
  - If you line the magnets up so that two of the same poles face each other, the magnets will push away. This is called repulsion. Opposite poles attract each other, but similar poles repel. Hence, **statement 2 is correct.**
23. (d)
- Microorganisms are used for various purposes.
  - They are used in the **preparation of curd, bread and cake.** Curd contains several microorganisms. Of these, the bacterium, Lactobacillus promotes the formation of curd. **Hence option 1 is correct.**
  - They are also used in **cleaning up the environment.** For example, the organic wastes (vegetable peels, remains of animals, faeces, etc.) are broken down into harmless and usable substances by bacteria.
  - Bacteria are also used in the **preparation of medicines.** These days a number of antibiotics are being produced from bacteria and fungi. Streptomycin, tetracycline and erythromycin are some of the commonly known antibiotics which are made from fungi and bacteria. The antibiotics are manufactured by growing specific microorganisms and are used to cure a variety of diseases. **Hence option 2 is correct.**
  - In agriculture they are used to **increase soil fertility by fixing nitrogen.** Some bacteria like cyanobacteria are able to fix nitrogen from the atmosphere to enrich soil with nitrogen and increase its fertility. These microbes are commonly called biological nitrogen fixers. **Hence option 3 is correct.**
24. (b)
- **Sound is a vibration that propagates as an acoustic wave, through a transmission medium such as a gas, liquid or solid.**
  - Sound **needs a medium to travel.** When the medium has been removed completely, it is said that there is a vacuum. The sound **cannot travel through a vacuum.** Hence, **statement 1 is not correct.**
  - **The frequency determines the shrillness or pitch of a sound.** If the frequency of vibration is higher we say that the sound is shrill and has a higher pitch. If the frequency of vibration is lower, we say that the sound has a lower pitch. **Hence, statement 2 is correct.**
25. (d)
- Archimedes' principle states that when a body is immersed fully or partially in a fluid, it experiences an upward force that is equal to the weight of the fluid displaced by it.
  - Archimedes' principle has many applications. It is used in designing ships and submarines. Lactometers, which are used to determine the purity of a sample of milk and hydrometers used for determining density of liquids, are based on this principle. **Hence, option (d) is the correct answer.**
26. (c)
- Recent Context: In May, the **National Green Tribunal (NGT) ordered all encroachments to be removed from Gujarat's Banni grasslands within six months and directed a joint committee to prepare an action plan in a month.**
  - The region's nomadic pastoralist community, the Maldharis, whose livelihoods depend on this protected shrub-savanna, welcomed the move.

- About Maldhari Tribes: The Maldhari community is a tribe of herdsmen in the state of Gujarat. The name Maldhari means the owner of goods - in this case, goods referring to cattle. **The Maldharis have lived in the Gir National Park, in the Banni Grasslands Reserve area, for the past thousand years. They have co-existed with the lions,** which the Gir National Park was created to preserve, for these thousand years.
- **Hence option (c) is the correct answer.**

27. (c)

- **An uncrewed Chinese spacecraft, Tianwen-1,** successfully landed on the surface of Mars, making **China the second space-faring nation after the United States to land on Mars.**
- Zhurong rover (part of the Tianwen-1 mission) landed on a site on a vast plain known as Utopia Planitia more than 2,000 km away from Jezero Crater where US rover Perseverance landed.
- **Zhurong rover, Powered by solar panels,** will probe the surface and subsurface of the planet, performing in-situ chemical analysis on soil composition.

28. (c)

- The Defence Research and Development Organisation (DRDO) will soon test the new **missile Agni Prime, an advanced version of the ‘Agni-1’ missile.**
- **Agni Prime’ is a short-range (surface to a surface) ballistic missile that will have a range of 1000 km to 1500 km and will have advanced features in agility and road mobility.**
  - It can carry a payload of around 1,000 Kg or a nuclear warhead.
- The double stage missile will be lighter and much sleeker than its predecessor ‘Agni-1’.
- Agni-1 is a short-range (surface to a surface) nuclear capable ballistic missile. It has a strike range of 700 km 1,200 km.
- **Hence option (c) is the correct answer.**

29. (a)

- Recently in June, Food Safety and Standards Authority of India (FSSAI) has banned blending of mustard oil with any kind of edible oil from 2021.
- **About Food Safety and Standards Authority of India (FSSAI)**
  - It is an **autonomous statutory body established under the Food Safety and Standards Act, 2006.**
  - It works **under administrative supervision of the Ministry of Health & Family Welfare.**
  - **It lays down science based standards** to ensure availability of safe and wholesome food for human consumption.

30. (b)

- Recently the **World Health Organization (WHO) has awarded China with a malaria-free certification.**
- In over three decades, **China has also become the first country to be awarded a malaria-free certification in the WHO Western Pacific Region.** Previously, WHO had awarded this certification to **Australia in 1981, Singapore in 1982 and Brunei Darussalam in 1987.**
- All over the world, WHO has given as many as 40 countries and territories a malaria-free certification. In **2021, El Salvador received the certification while Algeria and Argentina received it in 2019. In 2018, Paraguay and Uzbekistan received malaria-free certification.**
- **Hence option (b) is the correct answer.**

31. (a)

- **Kingdom of Eswatini formerly called Swaziland is a landlocked country in Southern Africa.** Recently there have been protests in the country to demand democratic reforms.
- **Eswatini is one of the smallest countries in Africa;** despite this, its climate and topography are diverse, ranging from a cool and mountainous climate to a hot and dry climate.
- Eswatini is a developing country and is classified as a lower-middle-income economy.
- The population is composed primarily of ethnic Swazis. The prevalent language is Swazi.
- **It has two capital cities Mbabane and Lobamba.**

32. (b)
- **Fit for 55'** refers to the at least 55% emission reduction target which the European Union (EU) has set for 2030. The proposed package aims to bring the EU's climate and energy legislation in line with the 2030 goal. The package was presented by the European Commission in July 2021.
  - **Hence option (b) is the correct answer.**
33. (b)
- Plantations are a type of commercial farming where a **single crop of tea, coffee, sugarcane, cashew, rubber, banana or cotton are grown over large tracts of land. Hence, statement 1 is not correct.**
  - Large amounts of labour and capital are required for Plantation crops. **Hence, statement 2 is correct.**
  - The produce may be processed on the farm itself or in nearby factories. The development of a transport network is thus essential for such farming.
34. (a)
- Shifting cultivation is also known as **'slash and burn' agriculture**. In a 'slash and burn' agriculture, **Farmers clear a patch of land and produce cereals and other food crops to sustain their family**. When the soil fertility decreases, the farmers shift and clear a fresh patch of land for cultivation. **Hence, option (a) is correct.**
35. (c)
- **Ferrous minerals are metallic minerals containing iron**. While non-ferrous minerals are also metallic, they do not contain iron.
  - **Ferrous metals** may include a lot of different alloying elements. **Some examples are chromium, nickel, molybdenum, vanadium, manganese.**
  - **Non-ferrous metals** include **bauxite, copper, gold, lead, nickel, tin, titanium and zinc, as well as copper alloys like brass and bronze. Hence, option (c) is correct.**
  - India's reserves and production of non-ferrous minerals is not very satisfactory
36. (c)
- The Himalaya consists of **three parallel ranges** in its longitudinal extent.
  - The **northernmost range is known as the Great or Inner Himalayas or the Himadri**. It is the most continuous range consisting of the loftiest peaks with an average height of 6,000 metres. **Hence, statement 1 is correct.**
  - **The range lying to the south of the Himadri forms the most rugged mountain system and is known as Himachal or lesser Himalaya.**
  - **The outermost range of the Himalayas is called the Shiwaliks. Hence, statement 2 is not correct.**
  - Shiwalik ranges are composed of unconsolidated sediments brought down by rivers from the main Himalayan ranges located farther north. **Hence, statement 3 is correct.**
37. (d)
- Terai belt is a region of Northern Plains **where the streams and rivers re-emerge and create a wet, swampy and marshy region**. This was a thickly forested region full of wildlife. **Dudhwa National Park** is located in this region. **Hence, option (d) is correct.**
38. (c)
- Apart from originating from the two major physiographic regions of India, the Himalayan and the Peninsular rivers are different from each other in many ways. Most of the Himalayan rivers are perennial. It means that they have water throughout the year. **Hence, statement 1 is not correct.**
  - The Himalayan rivers have long courses from their source to the sea compared to peninsular counterparts. **Hence, statement 2 is not correct.**

- They perform intensive erosional activity in their upper courses and carry huge loads of silt and sand. In the middle and the lower courses, these rivers form meanders, oxbow lakes, and many other depositional features in their floodplains. They also have well developed deltas. **Hence, statement 3 is correct.**

39. (d)

- **Secularism:** A secular state is one in which the state does not officially promote any one religion as the state religion. **Hence, option (d) is the correct answer.**

40. (c)

- **While the Prime Minister is the head of the government, the President is the head of the State.** In our political system the head of the State exercises only nominal powers
- The President is not elected directly by the people. **The elected Members of Parliament (MPs) and the elected Members of the Legislative Assemblies (MLAs) elect her.** Hence, option (c) is not correct.
- The President supervises the overall functioning of all the political institutions in the country so that they operate in harmony to achieve the objectives of the State.
- **All international treaties and agreements are made in the name of the President.** The President is the supreme commander of the defence forces of India.

41. (d)

- Values that inspired and guided the freedom struggle and were in turn nurtured by it, formed the foundation for India's democracy. These values are embedded in the Preamble of the Indian Constitution. They guide all the articles of the Indian Constitution.
- **The Preamble of the Constitution reads like a poem on democracy.** It contains the philosophy on which the entire Constitution has been built. It provides a standard to examine and evaluate any law and action of the government, to find out whether it is good or bad. It is the soul of the Indian Constitution. **Hence, option (d) is the correct answer.**

42. (b)

- The 'separation of powers' is a key feature of the Indian Constitution. Other branches of government – the legislature and the executive – cannot interfere in the work of the judiciary. The courts are not under the government and do not act on their behalf.
- It is also crucial that all judges in the High Court as well as the Supreme Court are appointed with very little interference from these other branches of government. **The judges of the Supreme Court and the High Courts are appointed by the President** on the advice of the Prime Minister and in consultation with the Chief Justice of the Supreme Court. **Hence, statement 1 is not correct.**
- In India, we have **an integrated judicial system**, meaning that the decisions made by higher courts are binding on the lower courts. **The decisions made by the Supreme Court are binding on all other courts in India.** Hence, statement 2 is correct.

43. (c)

- The Fundamental Rights in the Indian Constitution include:
  - Right to Equality
  - Right to Freedom
  - **Right against Exploitation and not Right to Exploitation**
  - Right to Freedom of Religion
  - Cultural and Educational Rights
  - Right to Constitutional Remedies
- **Hence option (c) is the correct answer.**

44. (c)

- **Right to Freedom:** This includes the right to freedom of **speech and expression**, the right to form **associations**, the right to move freely and reside in any part of the country, and the right to practise any **profession**, occupation or business.

- **Right to Freedom of Religion:** Religious freedom is provided to all citizens. Every person has the right to practise, profess and propagate the religion of their choice. Hence, **option (c) is the correct answer.**

45. (d)

- Plant and animal kingdom together **make the biosphere or the living world.** It is a narrow zone of the earth where **land, water and air interact** with each other to support life. Hence, **option (d) is correct.**

46. (b)

- The west and south west margins of the continents have **Mediterranean vegetation.** It is mostly found in the areas around the Mediterranean sea in Europe, Africa and Asia
- These regions are marked for **hot dry summers and mild rainy winters.** Hence, **statement 1 is not correct.**
- Mediterranean trees adapt themselves to dry summers with the help of their thick barks and wax coated leaves which help them reduce transpiration.
- Mediterranean regions are known as **‘Orchards of the world’ for their fruit cultivation.** Hence, **statement 2 is correct.**

47. (d)

- **Tropical Deciduous Forests** are the most widespread forests of India. They are **also called the monsoon forests** and spread over the region receiving rainfall between 200 cm and 70 cm. Trees of this forest type shed their leaves for about six to eight weeks in dry summer. Hence, **option (d) is the correct answer.**
- On the basis of the availability of water, these forests are further divided into moist and dry deciduous forests. The former is found in areas receiving rainfall between 200 and 100 cm.
- These forests exist, therefore, mostly in the eastern part of the country — northeastern states, along the foothills of the Himalayas, Jharkhand, West Odisha and Chhattisgarh, and on the eastern slopes of the Western Ghats.
- Teak is the most dominant species of this forest. Bamboos, sal, shisham, sandalwood, khair, kusum, arjun and mulberry are other commercially important species.

48. (a)

- India is also rich in its fauna. It has approximately 90,000 animal species. The country has about 2,000 species of birds. They constitute 13% of the world’s total.
- **India is the only country in the world that has both tigers and lions.** Hence, **statement 1 is correct.**
- The natural habitat of the Indian lion is the **Gir forest in Gujarat.** Hence, **statement 2 is not correct.**

49. (c)

- **The series of organisms feeding on each other and taking part at various biotic levels form a food chain.** Each step or level of the food chain forms a trophic level.
- **The flow of energy is unidirectional in a food chain.** The energy that is captured by the autotrophs does not revert back to the solar input and the energy which passes to the herbivores does not come back to autotrophs. As it moves progressively through the various trophic levels it is no longer available to the previous level. Hence, **statement 1 is correct.**
- Secondly, the energy available at each trophic level gets diminished progressively due to loss of energy at each level. Hence, **statement 2 is correct.**

50. (b)

- In India, much of its forest and wildlife resources are either owned or managed by the government through the Forest Department or other government departments.
- **More than half of the total forest land has been declared reserved forests.** Reserved forests are regarded as the most valuable as far as the conservation of forest and wildlife resources are concerned.

- **Almost one-third of the total forest area is protected forest**, as declared by the Forest Department. This forest land is protected from any further depletion. **Hence, statement 1 is not correct.**
- **Reserved and protected forests are also referred to as permanent forest estates. Madhya Pradesh has the largest area under permanent forests**, constituting 75 per cent of its total forest area. **Hence, statement 2 is correct.**

51. (d)

Let the two- digit number be  $(10x+y)$ , where  $y$  is the unit place digit and  $x$  is the tenth place digit.

After reversing, the number will be  $(10y+x)$ .

Now, according to the question,

$$(10x+y) - (10y+x) = 27$$

$$\text{or } 9x - 9y = 27$$

$$\text{or } (x - y) = 3$$

Possible values of  $x$  and  $y$  are  $(1, 4)$ ,  $(2, 5)$ ,  $(3, 6)$ ,  $(4, 7)$ ,  $(5, 8)$ , and  $(6, 9)$ . Hence, possible two digits numbers are 14, 25, 36, 47, 58 and 69.

Least number = 14

Highest number = 69

The required sum =  $14 + 69 = 83$

52. (b)

We know that the total probability of any event is one.

Probability of selection of only Golu = Golu gets selected AND Bholu gets rejected

$$= (1/3) \times (6/7) = 2/7$$

Probability of selection of only Bholu = Bholu gets selected AND Golu gets rejected.

$$= (1/7) \times (2/3) = 2/21$$

Probability of selection of only one = {only Golu gets selected} OR {only Bholu gets selected}

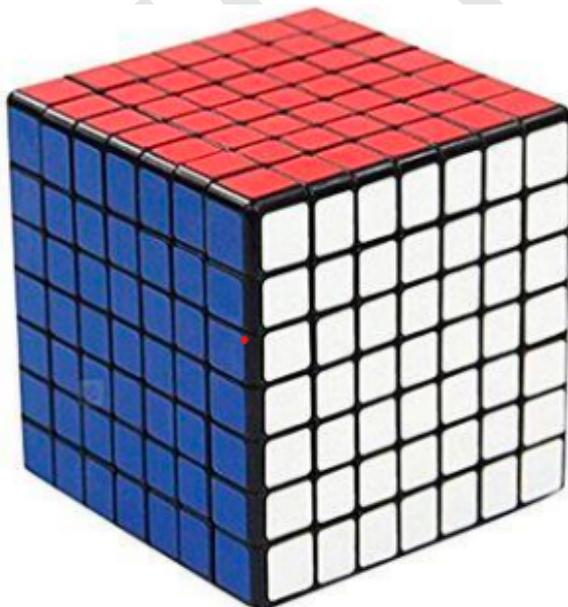
$$= (2/7) + (2/21)$$

$$= 8/21$$

[Note: 'AND' means multiply, 'OR' means addition]

53. (b)

There are a total of 343 identical cubes  $(7 \times 7 \times 7)$ .



The centre cubes on each of the six faces will have their one face painted.

Number of such centre cubes on each face =  $5 \times 5 = 25$

$\therefore$  Total number of cubes with only 1 face painted =  $6 \times 25 = 150$  cubes.

54. (c)

Let total percentage of people in India be 100%, out of which 10 % did not travel abroad.

Percentage of people who went to Europe =  $n(A) = 60\%$

Percentage of people who went to Russia =  $n(B) = 50\%$

Percentage of people who visited abroad =  $n(A \cup B) = 100\% - 10\% = 90\%$

We know,

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

$$90\% = 60\% + 50\% - n(A \cap B) = 110\% - n(A \cap B)$$

$$n(A \cap B) = 110\% - 90\% = 20\%$$

Therefore, 20% of people went to Europe as well as Russia.

Percentage of people who went to Russia only =  $50\% - 20\% = 30\%$

Hence, statement 1 and statement 2 both are correct.

55. (d)

Let total votes be  $100x$ .

Votes secured by Rohan = 30% of  $100x = 30x$

Remaining votes =  $100x - 30x = 70x$

Votes secured by Mohan = 60% of  $70x = 42x$

Remaining votes that were secured by Sohan =  $100x - (30x + 42x) = 28x$

Given that, Sohan secured 84000 votes.

$$\therefore 28x = 84000$$

$$\text{or } x = 84000/28 = 3000 \text{ votes}$$

So, Total votes =  $100x = 100 \times 3000 = 300000$  votes

Votes secured by Rohan =  $30x = 30 \times 3000 = 90000$  votes

Votes secured by Mohan =  $42x = 42 \times 3000 = 126000$  votes

Winning margin or difference of votes between Mohan and Rohan (i.e. winner and runner-up) =  $126000 - 90000 = 36000$  votes

56. (b)

In the given Venn diagram the number of students who failed in Hindi are shown as A and the number of students who failed in English are shown as B.

Total number of students = 35

Number of students who passed in both the subjects = 8

Remaining students that failed in atleast one subject =  $n(A \cup B) = 35 - 8 = 27$

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

$$27 = 17 + 18 - n(A \cap B)$$

$$n(A \cap B) = 8$$

Hence, out of 27 students, number of students who failed in both subjects = 8

So, Number of students who passed in exactly one subject =  $9 + 10 = 19$

Alternate Method

Total number of students in the class = 35

Number of students that passed in both the subjects = 8

Number of students failed in Hindi = 17

Therefore, number of students passed in Hindi =  $35 - 17 = 18$

Number of students failed in English = 18

Therefore, number of students passed in English =  $35 - 18 = 17$

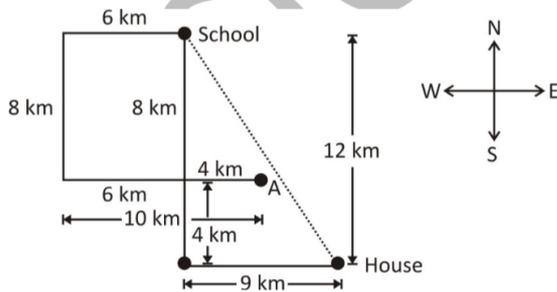
Number of students passed in only Hindi =  $18 - 8 = 10$

Number of students passed in only English =  $17 - 8 = 9$

Hence, number of students who passed in exactly one subject =  $9 + 10 = 19$   
Hence, option (b) is correct.

57. (c)

On drawing the direction diagram as per the question, we get:



Hence by Pythagoras theorem,

$$\text{Required distance} = \sqrt{(9^2 + 12^2)} = 15 \text{ km}$$

Hence, the school is 15 km in the north-west direction from his house.

58. (b)

Let the original selling price of item be Rs.  $300x$ .

$$\text{New selling price} = 300x \times 33.33\% = 300x \times \frac{1}{3} = \text{Rs. } 100x$$

He suffers a loss of 33.33% if he sells the item at Rs.  $100x$ .

$$\text{Then, cost price} = 100x \times \left(\frac{3}{2}\right) = \text{Rs. } 150x$$

$$60\% \text{ of original selling price} = 60\% \text{ of } 300x = \text{Rs. } 180x$$

$$\text{Profit \%} = \left[\frac{(180x - 150x)}{150x}\right] \times 100 = 20\%$$

59. (c)

To get the largest natural number, let us assume  $d = 0$ .

$$a - 1 = b + 2 = c - 3 = 4$$

$$\Rightarrow a - 1 = 4 \Rightarrow a = 4 + 1 = 5$$

$$\Rightarrow b + 2 = 4 \Rightarrow b = 4 - 2 = 2$$

$$\Rightarrow c - 3 = 4 \Rightarrow c = 4 + 3 = 7$$

Hence, c is the largest number.

60. (c)

Let the weight of the first, second and third pieces be A, B and C respectively.

Weight of first piece = sum of the first 4 prime numbers

$$\therefore A = 2 + 3 + 5 + 7 = 17 \text{ units} \dots (i)$$

Weight of second piece = average of first three odd numbers + half of third piece

$$\therefore B = \frac{(1 + 3 + 5)}{3} + \frac{C}{2}$$

$$\Rightarrow B = 3 + \frac{C}{2} \dots (ii)$$

Weight of third piece = sum of first and second piece

$$\therefore C = A + B$$

From equation (ii) and (iii), we get:

$$\therefore C = 17 + 3 + \frac{C}{2}$$

$$\Rightarrow C - \frac{C}{2} = 20$$

$$\Rightarrow \frac{C}{2} = 20$$

$$\Rightarrow C = 40 \text{ units}$$

From equation (ii), we get:

$$\therefore B = 3 + \frac{40}{2} = 23 \text{ units}$$

So, Weight of the whole cake =  $A + B + C = 17 + 23 + 40 = 80 \text{ units}$ .

61. (d)

Let the total steps in the escalator be  $N$ .

Since the ratio of speeds of Ajeet and Sujeet is  $9 : 5$  and the ratio of distance covered by both is  $30 : 20$ , the ratio of the time in which they reach the top is  $(30/9) : (20/5)$ , i.e.  $5 : 6$ .

Thus, the escalator covers the balance  $(N - 30)$  and  $(N - 20)$  steps in time intervals in the ratio  $5 : 6$ .

Since speed of escalator is same in both the cases, the ratio of distances covered is same as ratio of time, i.e.  $(N - 30) : (N - 20)$  will be in the ratio of  $5 : 6$ .

$$\therefore (N - 30)/(N - 20) = 5/6$$

$$\therefore 6(N - 30) = 5(N - 20)$$

$$\therefore 6N - 180 = 5N - 100$$

$$\therefore N = 80 \text{ steps}$$

62. (c)

Let the speed of the runner up be  $x$  and that of the winner be  $2x$ .

Let  $d$  be the distance covered by the runner up in 5 minutes.

Then the distance covered by the winner in 5 min =  $(d + 1)$  km

Since time taken is same for first meeting,

$$d/x = (d + 1)/2x$$

$$\text{or } 2d - d = 1$$

$$\text{or } d = 1 \text{ km}$$

Hence, the winner covers 2 km in 5 minutes.

Therefore, required time taken to cover 4 km =  $(4/2) \times 5 = 10$  minutes

63. (b)

Let after  $x$  months Rakesh joined Ambuj in business.

Rakesh invested 33.33% more amount than Ambuj.

$$33.33\% = 1/3$$

Ratio of amounts of Ambuj and Rakesh is  $3 : 4$ .

Ratio of time period of investment of Ambuj and Rakesh is  $12 : (12 - x)$ .

Ratio of amount of Ambuj and Rakesh =  $3 \times 12 : 4 \times (12 - x) = 9 : (12 - x)$

Total profit = Rs.8704

Ambuj's profit = Rs.4608

So, Rakesh's profit = Rs.8704 - Rs.4608 = Rs.4096

$$\text{So, } 9/(12 - x) = 4608/4096$$

$$\text{or } 12 - x = 8$$

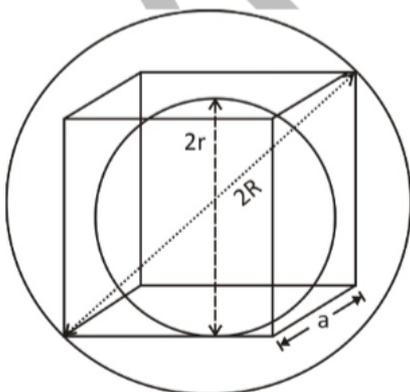
$$\text{or } x = 4 \text{ months}$$

Hence, ratio of time period of investment of Ambuj and Rakesh =  $12 : (12 - 4)$  or  $3 : 2$

64. (d)

Let the radius of bigger sphere be  $R$ , radius of small sphere be  $r$  and side of cube be  $a$ .

The following diagram shows the bigger sphere, small sphere and cube.



We know that,

Diagonal of cube of maximum side in a sphere is equal to the diameter of sphere.

Diagonal of cube =  $\sqrt{3}$  side =  $a\sqrt{3}$

or  $a\sqrt{3} = 2R$

or  $R = (a\sqrt{3})/2 \dots (i)$

We know that the diameter of sphere of maximum radius inscribed in a cube is equal to the side of cube.

Diameter of smaller sphere = side of cube

or  $2r = a$

or  $r = a/2 \dots (ii)$

From equations (i) and (ii), we get:

Ratio of radius of smaller sphere and that of bigger sphere =  $r : R$

$\therefore r : R = (a/2) : (a\sqrt{3})/2 = 1 : \sqrt{3}$

65. (d)

**The correct option is 14 min. 40 sec.**

Part filled in 4 minutes =  $4(1/15 + 1/20) = 7/15$

Remaining part =  $(1 - 7/15) = 8/15$

Part filled by B in 1 minute =  $1/20$

Therefore,  $1/20 : 8/15 :: 1 : x$

$X = (8/15 \times 1 \times 20) = 32/3 = 10 \text{ minute } 40 \text{ sec}$

Therefore, the tank will be full in  $(4 \text{ min} + 10 \text{ min} + 40 \text{ sec}) = 14 \text{ min. } 40 \text{ sec}$

66. (c)

First three-digit number less than 200 which is divisible by 5 will be 100 and last such number will be 195.

So total number of terms  $(n) = [(195 - 100)/5] + 1 = 20$

Here, 1st term  $(a) = 100$

Last term  $(l) = 195$

Common difference  $(d) = 5$

Sum of all the  $n$  terms =  $n/2[a+l]$

=  $20/2[100+195]$

=  $10 \times 295$

= 2950

Hence, sum of all the 20 terms = 2950

67. (c)

Let, total guests be 100.

Number of women = 60

Number of men = 40

Total number of married couple guests = 80, i.e. (40 men and 40 women).

Thus, we can say that all men are married. Hence, statement 1 is correct.

Now, out of a total of 60 women, 40 are married. Hence  $60 - 40 = 20$  women are unmarried.

$20 = x\%$  of 60

or  $x = (20 \times 100)/60$

or  $x = 100/3 = 33.33\%$

Hence, statement 2 is also correct.

68. (c)

Given:

Failed in quant = 40%, i.e. 60% passed in quant.

Failed in reasoning = 30%, i.e. 70% passed in reasoning

Statement 1:

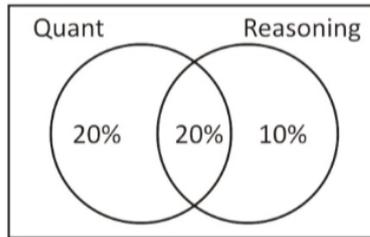
Failed in both quant and reasoning  $n(A \cap B) = 20\%$

Failed in quant =  $n(A) = 40\%$

Failed in reasoning =  $n(B) = 30\%$

Venn diagram for failed participants:

Fail



Now, participants that failed in any one of the subjects =  $n(A \cup B)$

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

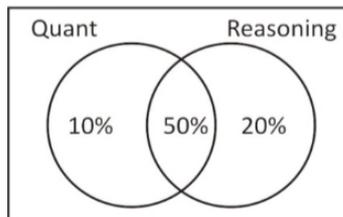
$$= 40\% + 30\% - 20\%$$

$$= 50\%$$

Thus, participants that passed in both subjects =  $100 - 50 = 50\%$

Venn-diagram for passed participants:

Pass



According to Statement 2, 40 participants passed in only quant.

By looking at the above venn diagram we can say that 10% participants passed in only quant.

$$\text{Hence, } 10\% = 40$$

$$\text{or } 1\% = 4$$

$$\text{or } 100\% = 4 \times 100 = 400 \text{ participants}$$

Hence, both statements 1 and 2 are required to find the total number of participants.

69. (b)

**Proper fraction:** A fraction that is less than one, with the numerator less than the denominator.

$$\text{e.g. } (2/5) = 0.4$$

Let, the numerator of  $(2/5)$  be increased by 1 and the denominator be decreased by 1.

$$\therefore \text{Resultant fraction} = [(2 + 1) / (5 - 1)] = 3/4 = 0.75$$

We can see that:  $2/5 < 3/4$

Let us take another fraction, e.g.  $(3/7) = 0.428$

Now, the numerator of  $(3/7)$  is increased by 1 and the denominator and the denominator is decreased by 1.

$$\therefore \text{Resultant fraction} = [(3 + 1) / (7 - 1)] = 4/6 = 0.66$$

We can see that:  $3/7 < 4/6$

Thus, we can say that the resulting fraction is always greater than the original fraction.

70. (c)

Following are the pairs of two-digit prime numbers which are mirror images of each other:

(13, 31); (17, 71); (37, 73); (79, 97)

Hence, there are 4 such pairs.

**Explanation for questions 71 to 73:**

Since, there are four individuals standing between A and B and position of C is 7<sup>th</sup> to the left of A. So there are two possible cases for the given arrangement.

Case I: C ----- A ----- B

Case II: C - B ----- A

Now, as the number of individuals between C and D and D and B is same, then in case I, position of D will be to the immediate left of A while in case II, D will stand between B and C.

Case I: C ----- D A ----- B

Case II: C D B ----- A

Case I will be eliminated because D is not the immediate neighbour of A.

Now, as position of A is exactly in the middle of the row. Hence, final arrangement will be:

Case II: C D B ----- A -----

Hence, 15 persons are standing in the row.

71. (d)

Statement 1: Position of B is third from one of the extreme ends. — true

Statement 2: Position of A is eighth from extreme right end. — true

Therefore, neither statement 1 nor statement 2 is false.

72. (b)

It is said that E is standing fourth to the right of D then the arrangement will be:

C D B -- E - A -----

Hence, 9 persons are standing to the right of E.

73. (c)

Hence, 15 persons are standing in the row.

74. (c)

**Case I:**

By looking at the diagram of case I we can say that conclusion I cannot be drawn because some Clerks are Officers and conclusion III cannot be drawn because all Officers are not Graduates.

**Case II:**

By looking at the diagram of case II we can say that conclusion II can be drawn because all Clerks can be Scientists. It is a possibility.

75. (b)

From Statements 1 and 2 we can say that:

$G < D = F > A$  and  $C > D = F > A$

Therefore, we can say that C is the highest scorer and either A or G is the lowest scorer.

But from this we can't find direct relation between A and G. So option (a) is incorrect.

Also we know that C is the highest scorer. Hence, both options (c) and (d) are also incorrect.

Option (b) is correct because we can conclude that A scored less than D.

76. (d)

Either A or G is the lowest scorer. Therefore we cannot determine exactly who the lowest scorer is.

Hence, option (d) is correct.

77. (a)

$$33 + 25 = 58$$

$$19 + 39 = 58$$

Similarly,

$$15 + 25 = 40$$

$$? + 13 = 40$$

$$\text{or } ? = 40 - 13 = 27$$

78. (a)

Here, in all options the number of digits is equal to the number of letters of the given word, which means every letter is represented by a digit.

In the given word 'AGGRAVATE', letter 'A' repeats 3 times and 'G' repeats 2 times.

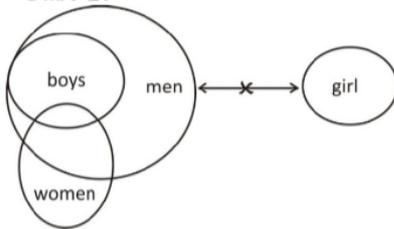
So, in option (a):

We can see that the first, fifth and seventh letter is 'A' which is represented by 2. While, second and third letter is 'G' which is represented by 4.

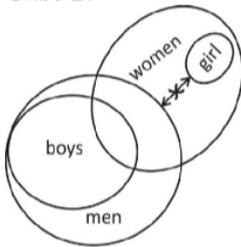
Hence, option (a) is correct.

79. (b)

Case 1:



Case 2:



Conclusion III says that some boys being girls is a possibility. But it is not true as no men can be a girl and all boys are men.

By looking at the diagrams in case 1 and case 2, we can say that both conclusions 1 and 2 are individually not true. But either of them must be true.

Hence, option (b) is correct.

80. (b)

The pattern of the sequence is:  $n^n$

1    4    ~~25~~ (27)    256    3125    46656  
 $1^1$      $2^2$      $3^3$      $4^4$      $5^5$      $6^6$

Therefore, the wrong term in the series is 25.

Hence, option (b) is the correct answer.

81. (a)

**Option (a) is correct.** The passage describes the role played by the atmosphere in maintaining the heat budget of the Earth so that life can thrive on this planet. The line "*The atmosphere keeps the average temperature of the Earth fairly steady during the day and even during the course of the whole year*" explains the role of the atmosphere on the temperature of the Earth.

**Option (b) is incorrect.** The line "*on the surface of the moon, with no atmosphere, the temperature ranges from  $-190^\circ\text{C}$  to  $110^\circ\text{C}$* " describes the situation on the moon but it cannot be inferred from this that in the future also, life cannot exist on the moon. This is an extreme statement to infer from the given passage.

**Option (c) is incorrect.** This can be correct on its own but since the passage does not refer to industrial activities and their impact on the heat budget of the Earth, this cannot be the logical message.

**Option (d) is incorrect.** The passage does not provide any data related to the temperature of the Earth year by year basis, so it cannot be inferred from the passage that the average temperature is increasing.

82. (b)

**Option (a) is incorrect.** The passage does not mention the effectiveness of fertilizers and does not compare them with manure. So, this option cannot be implied from the given passage.

**Option (b) is correct.** The passage mentions that organic matter improves the water holding capacity of the soil and clayey soil contains large quantities of organic matter. Thus, it can be implied that the water retention capacity of clayey soils is more than sandy soils.

**Option (c) is incorrect.** The passage implies the exact opposite to this option. The line "*In using manure, we use biological waste material, which is advantageous in protecting our environment from excessive use of fertilizers*" expresses that manure is eco-friendly due to the usage of biological waste material.

**Option (d) is incorrect.** The passage does not mention anything about the suggestive measures to boost the agricultural sector by promoting organic farming.

83. (b)

**Option (a) is incorrect.** The passage discusses democracy being a better alternative but it does not imply that it is the only alternative. Moreover, global problems cannot be related to the just form of governance only. Therefore, it is not logical to infer Democracy as the only solution to all the problems as expressed in the line "*Democracy cannot get us everything and is not the solution to all problems*".

**Option (b) is correct.** The line "*This is the strength and the weakness of democracy: the fate of the country depends not just on what the rulers do, but mainly on what we, as citizens, do*" highlights the importance of citizen participation in a democracy. Thus, this is the best message conveyed by the passage.

**Option (c) is incorrect.** The passage does not refer to the negatives of democracy. The message conveyed by this option might be true in itself but since it cannot be inferred from the given passage, it is not the right option.

**Option (d) is incorrect.** The passage highlights the importance of citizen participation in a democracy but it does not make any reference to the role played by the rulers in a democracy. It cannot be inferred from the given passage how significant the role of rulers is in a democracy. Therefore, this is not the right option.

84. (b)

**Option (a) is incorrect.** The passage just describes the idea of freedom in general and in a democracy in the lines "*Freedom means the absence of constraints. In practical life it means the absence of interference in our affairs by others – be it other individuals or the government*". It does not mention the provisions related to freedom in the Indian Constitution. So, it is not logical to imply that the right to freedom is sacrosanct.

**Option (b) is correct.** The lines, "*We want to live in society, but we want to be free. We want to do things in the way we want to do them*", highlight the idea of freedom in a society. But, the line "*However, freedom is not unlimited license to do what one wants*" puts some constraint on the freedom. Thus, the theme of the passage aligns with the idea of creating a balance between practicing freedom and taking care of society also which is possible with some reasonable restrictions.

**Option (c) is incorrect.** The passage mentions that with freedom of speech in a democracy, the development of ideas happens due to free communication in the line "*Our ideas and personality develop only when we can freely communicate with others*". Logically, democracy makes free communication easy. But it is not logical to imply that only democracy is capable of providing an environment of free communication. Since the passage does not make any comparison with other forms of government, this option cannot be the right option.

**Option (d) is incorrect.** Again, as explained earlier, freedom needs to be exercised with reasonable restrictions as per the line "*However, freedom is not unlimited license to do what one wants*". It is not logical to imply that the right to freedom of speech and expression should be absolute.

85. (a)

**Option (a) is correct.** The line *“The quality of the population ultimately decides the growth rate of the country”* highlights the importance of human capital in the growth of a nation. It further encourages investment in human resources in the line *“Investment in human resources (via education and medical care) can give high rates of return in the future”*.

**Option (b) is incorrect.** The theme of the passage encourages governments to spend more on human resource development. But it should not be implied that the spending needs to be focused in one direction only. Since human resource development is an all-inclusive approach, this statement is out of context with the passage.

**Option (c) is incorrect.** The passage describes the importance of literacy and good health in the growth of the nation in the line *“The quality of the population ultimately decides the growth rate of the country”* but it cannot be implied that the people living in developing or under-developed nations are all unhealthy and illiterate. The majority of them can be illiterate and unhealthy due to lack of access to resources but it is not logical to generalize. Thus, it cannot be the critical message conveyed by the passage.

**Option (d) is incorrect.** The passage does not refer to issues related to population explosion and does not suggest any urgent reforms the government should take. Thus, this cannot be the right option.

86. (a)

**Option (a) is correct.** The line *“The PDS has proved to be the most effective instrument of government policy over the years in stabilizing prices and making food available to consumers at affordable prices”* highlights the achievement of the PDS in stabilizing prices that controls food inflation and making food available to all ensuring food security in India.

**Option (b) is incorrect.** The line *“The purchased food grains are stored in granaries and are distributed through government-regulated ration shops among the poorer section of the society”* explains the objective of stored food grains. It does not mention anything about boosting the exports.

**Option (c) is incorrect.** The line *“The PDS has proved to be the most effective instrument of government policy over the years in stabilizing prices and making food available to consumers at affordable prices”* highlights the achievement of the PDS in making food grains available to poorer sections of the society. But the passage does not present any data or information that says that hunger has been eliminated from India. Therefore, this cannot be the right option.

**Option (d) is incorrect.** The passage mentions that the government provides MSP for wheat and rice in the lines *“The FCI purchases wheat and rice from the farmers in states where there is surplus production. The farmers are paid a pre-announced price for their crops. This price is called Minimum Support Price (MSP)”*. But it cannot be implied from this that only wheat and rice are eligible for MSP.

87. (b)

**Option (a) is incorrect.** The passage only mentions the reasons behind climate change and its consequences on the earth and humans. Since it does not mention anything about UNFCCC or the Paris Agreement, this statement cannot be the right option.

**Option (b) is correct.** The line *“Shifting of seasons, increasing global temperatures, rising sea levels, changing agricultural patterns have resulted in frequent disasters like landslides, tsunamis, drought, famine, population migration and major health hazards not just for us but also for our children and grandchildren”* highlights the need for some sustainable solutions to fight the climate change and its effects.

**Option (c) is incorrect.** Although the passage mentions the concern regarding rising sea levels due to climate change, it does not mention any urgent need to evacuate the coastal areas.

**Option (d) is incorrect.** The passage does not mention any such prediction or statistics related to the extinction of species. Therefore, this cannot be the right option."

88. (a)

**Option (a) is correct:** The lines —women in societies practising wheat-based agriculture have started challenging the norm of men being sole decision-makers. substantiates the argument put forward by this statement.

**Option (b) is incorrect:** The reason for agriculture being a male dominated sector has not been specified in the passage.

**Option (c) is incorrect:** The passage makes a mention of women engaged in wheat-based livelihoods. It also talks about women transitioning into other roles like innovators and managers.

**Option (d) is incorrect:** From the passage, it is clear that men have been traditional decision makers in the past and that women have been recently transitioning into decision making roles. However, it does not delve into the specific reason behind men hitherto being the sole decision makers in rural areas.

89. (a)

It is nowhere mentioned in the passage that sports is essential for success. Also, there is no mention of participation and winning in the passage. **Thus, options (b) and (c) are incorrect.**

Though, it is mentioned that sporting events are organized at regular intervals, it is not suggested anywhere that these events should be organized in educational institutions. **Therefore, option (d) is also incorrect.**

The second sentence of the passage talks about sports and social development which is reflected in option (a). **Thus, option (a) is correct.**

90. (b)

**Option (a) is incorrect** as the passage does not prescribe afforestation to restore forests. The passage clearly says that forest restoration is more than just planting trees, i.e. It is important to remember that forest restoration is more than just planting trees. It's about reinstating the balance of the ecological, social and economic benefits of forests and trees within a broader pattern of land use.

**Option (b) is correct.** We need to take a more comprehensive and multidimensional approach with respect to land use to achieve the goal of forest restoration. It can be inferred from the following lines i.e. forest restoration is more than just planting trees. It's about reinstating the balance of the ecological, social and economic benefits of forests and trees within a broader pattern of land use.

**Option (c) is incorrect** as the passage does not say anything regarding invasive alien species. It merely prescribes judicious mix of regeneration of native species and planting of trees, i. e. this is best achieved by assisting the natural regeneration of local plant species, while in others, the planting of trees and other vegetation helps speed up the process of restoring the health and productivity of degraded landscapes.

**Option (d) is incorrect.** The passage does not prescribe the promotion of Green walls globally. It merely mentions it as one of the strategies of restoring forests.

91. (d)

**Option (a) is incorrect.** The passage mentions that with new methods of manufacturing factories came up and started expanding which led to the shift of labor from primary to the secondary sector. Nowhere In the passage, it is mentioned that people have given up farming practices. Thus, it is not logical to imply that agricultural lands have been replaced by industries.

**Option (b) is incorrect.** The passage does not talk about the demand for agricultural produce. So, it cannot be implied that it gets replaced or reduced.

**Option (c) is incorrect.** The passage does not mention any data or statistics comparing the contribution of both sectors to the GDP. Therefore, this option cannot be the right option.

**Option (d) is correct.** The theme of the passage highlights the changing nature of economic activities with the advancement of technology and the development of any nation. Initially, it mentioned the growing importance of the secondary sector in the line, “Secondary sector gradually became the most important in total production and employment” and in the later part it discusses the growing tertiary sector in the lines, “In the past 100 years, there has been a further shift from secondary to tertiary sector in developed countries. The service sector has become the most important in terms of total production.” Thus, it can be implied that as the nation develops, the economic activities change from primary to tertiary sector.

92. (d)

**Option (a) is incorrect.** The passage mentions that SHGs have emerged as an alternative option to avail loans for poor people as they deal with the issue of lack of collateral in accessing formal channels. But this does not mean that the region where SHGs are functional doesn't have a presence of banks. Thus, this cannot be the logical option.

**Option (b) is incorrect.** The passage explains the concept of SHGs in the line “*The idea is to organize rural poor, in particular women, into small Self-Help Groups (SHGs) and pool their savings*” where it focuses on women particularly. But it does not mention that SHGs are exclusively for women. The majority of the members may be women. But it is not logical to imply that members of the SHGs can be women only.

**Option (c) is incorrect.** The phrase “*The idea is to organize rural poor, in particular women, into small Self-Help Groups (SHGs) and pool their savings. A typical SHG has 15-20 members, usually belonging to one neighborhood, who meet and save regularly*” explains the nature of a Self-Help Group which is not formal. So, this option cannot be the right option.

**Option (d) is correct.** The lines “*Members can take small loans from the group itself to meet their needs. The group charges interest on these loans but this is still less than what the moneylender charges. Thus, the SHGs help borrowers overcome the problem of lack of collateral*” highlight the role played by the SHGs in the financial inclusion by providing easy access of credit to the poorer sections of the society.

93. (c)

**Option (a) is incorrect.** The passage explains the concept of globalization in the lines “*Globalization is the process of rapid integration of countries. This is happening through greater foreign trade and foreign investment*”. However, it does not mention that only democratic countries can participate in this process. Neither it does mention any specific rules for the countries to participate in it.

**Option (b) is incorrect.** The passage does not mention anything about WTO. So, this option cannot be implied from the passage.

**Option (c) is correct.** The theme of the passage revolves around both the positives and negatives of the globalization process. The line “*While globalization has benefited well-off consumers and also producers with skill, education and wealth, many small producers and workers have suffered as a result of the rising competition*” highlights the importance of government intervention.

**Option (d) is incorrect.** The passage does not mention any data related to formal employment and whether it has increased or decreased after the reforms related to globalization. So, this option cannot be the right option.

94. (b)

**Option (a) is incorrect.** The passage mentions increasing the intake of fruits and vegetables in the diet of Indian people. But it does not provide any data or statistics related to the current levels of production of fruit and the demand level. So, it cannot be inferred that the current production does not meet the current domestic demand.

**Option (b) is correct.** The passage aligns with the concept of making dietary transitions in Indian people by discouraging intake of wheat and rice as expressed in the line “*The intake of oils, rice, wheat, and sugar*”

needs to be reduced substantially from current levels in most states". It can be implied that some interventions are needed to make this transition possible.

**Option (c) is incorrect.** The passage does not mention anything about the status of Agri infrastructure in India. Thus, this option cannot be the right option.

**Option (d) is incorrect.** The passage talks about reducing the intake of wheat and rice from the diet of Indian people and not avoiding these staples completely as mentioned in the line "*The intake of oils, rice, wheat, and sugar needs to be reduced substantially from current levels in most states*". Thus, stopping production is not a logical and feasible step.

95. (c)

**Option (a) is incorrect.** The passage mentions the issues caused by the dolomite mining in West Bengal. But the passage does not refer to any such extreme solution. Therefore, it is not logical to imply this solution that mining should be completely banned.

**Option (b) is incorrect.** The line "*Clearing of forests is continuing with projects like the Narmada Sagar Project in Madhya Pradesh, which would inundate 40,000 hectares of the forest*" highlights the issue of deforestation caused due to such developmental projects. However, it does not mention the efforts of the government to reverse this huge damage that might be done by afforestation drives. It can be possible that the efforts done are not according to the scale of the damage but implying that no restoration plans are there is not logical.

**Option (c) is correct.** The passage mentions the issues caused due to mining in the line "*It has disturbed the natural habitat of many species and blocked the migration route of several others, including the great Indian elephant*". A dedicated wildlife corridor for the safe and smooth migration of animals can be the logical solution for this.

**Option (d) is incorrect:** The passage nowhere provides information regarding the Indian elephant's IUCN status.

96. (a)

**Option (a) is correct.** The line "Ideas of national unity in early-nineteenth-century Europe were closely allied to the ideology of liberalism" highlights the role played by the ideology of liberalism in the development of the idea of national unity in Europe in the 19<sup>th</sup> century.

**Option (b) is incorrect.** The passage mentions the end of autocracy in France during the French revolution in the line "*Since the French Revolution, liberalism had stood for the end of autocracy and clerical privileges*" but this cannot be implied that autocracy was present in France only.

**Option (c) is incorrect.** The passage discusses the development of the idea of liberalism in Europe and the role it played in national unity. It further explains the idea of liberalism related to the end of autocracy in the French revolution also. However, nowhere in the passage, it is referred that European nations are more liberal than other nations. The passage does not mention the state of liberalism in other nations. So, this option is not the right option.

**Option (d) is incorrect.** The line "*liberalism stood for freedom for the individual and equality of all before the law*" explains that liberalism is based on two elements: individualism and equality of all before the law. Thus, this option is wrong.

97. (a)

**Option (a) is correct.** As per the passage, Human beings are now the only living members of what many zoologists refer to as the human tribe, Homini. But there is abundant fossil evidence to indicate that we were preceded for millions of years by other hominins, such as Ardipithecus and Australopithecus.

**Option (b) is not correct.** Nowhere in the passage there is a mention of Charles Darwin's book "On the origin of species" and its debate on evolution. Hence the statement is not correct.

**Option (c) is not correct.** As per the passage, we are now the only living members of what many zoologists refer to as the human tribe, *Homini*, but there is abundant fossil evidence to indicate that we were preceded for millions of years by other hominins, such as *Ardipithicus*, *Australopithecus*. Hence this statement is not correct.

**Option (d) is not correct.** As per the passage “and other species of *Homo*, and that our species also lived for a time contemporaneously with at least one other member of our genus *H. neanderthalensis* (the Neanderthals).” There could have been more genus with which humans were contemporary.

98. (c)

**Option a is incorrect.** The passage mentions that economic estimates of nature’s services are much higher than the value of nature-based human activities. However, the rationale behind quantification is not to exploit nature further, but to conserve it.

**Option b is incorrect.** The passage does not mandate green accounting practices to be incorporated by countries.

**Option c is correct.** The lines, “Economic estimates of services, conservation or restoration benefits (for example, greenhouse gas regulation, flood protection) tend to outweigh those private benefits (for example, profits from agriculture or logging)”, clearly validates this option.

**Option d is correct.** The passage highlights the significance of nature’ services like flood control. However, it does not say that governments should prioritise investment in forest conservation over flood control measures.

99. (d)

**Statement 1 is not correct** as nowhere in the passage it is mentioned that destruction caused by forest fires can be recovered in the near future.

**Statement 2 is not correct** as the passage mentioned that these are the two main reasons but it does not rule out other possible reasons.

**Statement 3 is not correct** because the passage does not explicitly say that forest fires are natural checks. Besides, it cites two human factors, forest dwellers and NTFP collectors as playing a major role in causing such fires. It indirectly implies that regulating such human interventions can reduce the instances of forest fires.

**Statement 4 is correct;** the passage mentioned that the two main causes are well known: Poachers and non-timber forest product (NTFP) collectors.

100. (c)

**Option (a) is not correct.** Passage talks about the reasons like poachers and NTFPs but does not talk about their complete ban.

**Option (b) is not correct.** As the passage says that forest fires come at a heavy price: Irreversible damage to the forest and its inhabitants.

**Option (c) is correct** because the passage mentions humans’ irresponsible behaviour like poaching and NTFP collectors as being two main reasons triggering forest fires. Thus, forest fires by implication can be minimised with proper regulatory mechanisms put in place.

**Option (d) is not correct.** Nowhere does the passage talk about IUCN and its role in the protection of wildlife flora and fauna in national parks and wildlife sanctuaries.

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