



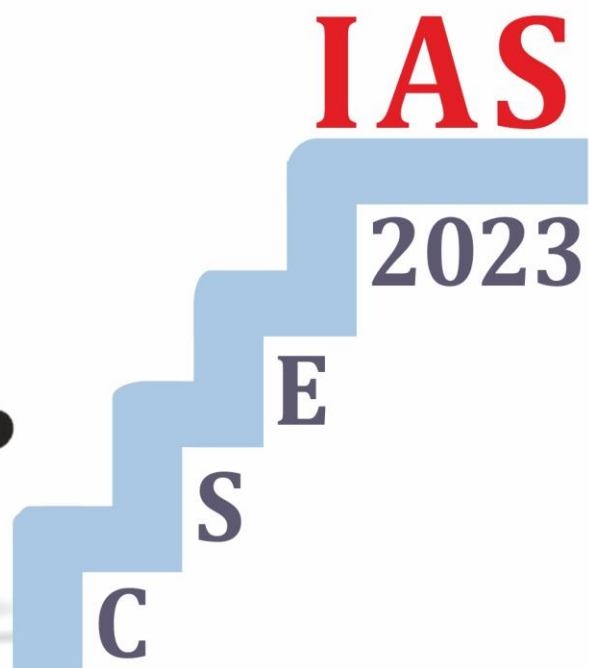
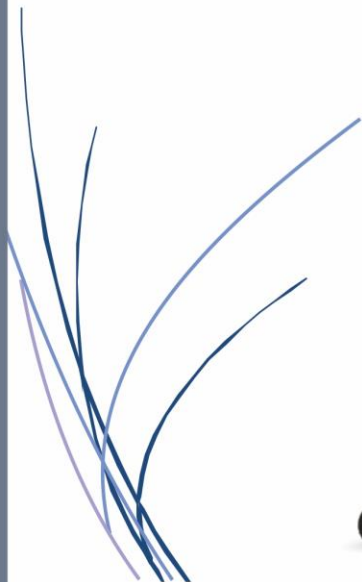
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## "THE 400 DREAMS" CSE 2023

**ANSWER KEY  
WITH EXPLANATION**



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# P A



Public Admin.



By **S. Ansari**

**Foundation CSE 2022-23**

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APR **40**

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" The emphasis on understanding the demand of the questions and structuring of the answers by Ansari Sir was helpful in the process of improving the content of the answers. "

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ABHILASH MISHRA	05	334	2016
ASHWINI PANDAY	34	267	2015
TUSHAR SINGLA	86	287	2014
UDITA SINGH	46	231	2013
PRINCE DHAWAN	03	394	2011

**"THE 400 DREAMS" CSE 2023****ANSWER KEY WITH EXPLANATION**

1.

**Answer: C****Explanation:**

- The Sun temple at Modhera dated back to the early eleventh century and was built by Raja Bhimdev I of the Solanki Dynasty in 1026. **Hence, statement 1 is correct.**
- The north-western parts of India, including Gujarat and Rajasthan, various types of stones and ranges in colour and type. While sandstone is the commonest, a grey to black basalt can be seen in some of the tenth to twelfth century temple sculptures. Sun Temple of Modhera is an example of it. **Hence, statement 2 is incorrect.**
- It is a temple made to honour the Sun God in Modhera village of Mehsana district on the bank of River Pushpavati. **Hence, statement 3 is correct.**

2.

**Answer: D****Explanation:**

- The most famous Mauryan ruler was Ashoka. He was the first ruler who tried to take his message to the people through inscriptions. His inscriptions were found not only at the capital and provincial capitals but also along trade routes so that people read them and get the message of the King. **Hence, statements 2 and 3 are incorrect.**
- Most of Ashoka's inscriptions were in Prakrit and written in the Brahmi script. **Hence, statement 1 is incorrect.**

3.

**Answer: D****Explanation:**

- Lilatilakam is a fourteenth-century text dealing with grammar and poetics, was composed in Manipravalam – literally, "diamonds and corals" referring to the two languages, Sanskrit and the regional language.

4.

**Answer: C****Explanation:**

- The cire-perdu or 'lost-wax' process is associated with Bronze Sculpture, made as long ago as the Indus Valley Civilization.

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**3**



5.

Answer: C

Explanation:

- The Mughals were descendants of two great lineages of rulers. From their mother's side, they were descendants of Genghis Khan (died 1227), the Mongol ruler who ruled over parts of China and Central Asia. From their father's side, they were the successors of Timur (died 1404), the ruler of Iran, Iraq and modern-day Turkey. **Hence, statement 1 is incorrect.**
- The Mughals did not believe in the rule of primogeniture, where the eldest son inherited his father's estate. Instead, they followed the Mughal and Timurid custom of coparcenary inheritance or a division of the inheritance amongst all the sons. **Hence, statement 2 is correct.**
- The Mughals did not like to be called Mughal or Mongol. This was because Genghis Khan's memory was associated with the massacre of innumerable people. It was also linked with the Uzbeks, their Mongol competitors. On the other hand, the Mughals were proud of their Timurid ancestry because their great ancestor had captured Delhi in 1398. **Hence, statement 3 is correct.**

6.

Answer: A.

Explanation:

- **Statement 1 is correct:** In a parliamentary democracy, the executive is responsible to the legislature.
- **Statement 2 is correct:** In a presidential democracy, the executive is not responsible to the legislature.
- **Statement 3 is incorrect:** In a federal system, the constituent units do not enjoy equal power.

7.

Answer: A

Explanation:

- Equality concept provides for differential treatment based on classification. Thus, option A does not fall under equality.

8.

Answer: B

Explanation:

- The objectives of local government are democratic decentralization and popular participation among others. Mobilization of local level savings is not its objective.

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9.

**Answer: C****Explanation:**

- The Constitution, while providing for the government, its powers and functions, etc., also lays down the limitations of the government. Hence, it protects the people from governmental excesses.

10.

**Answer: C****Explanation:**

- Option C is the most appropriate description of the governor in the Indian context.

11.

**Answer: B****Explanation:**

- Igneous Rocks form out of magma and lava from the interior of the Earth. They are formed when the magma cools and solidifies.
  - **Statement 1 is correct:** Igneous rocks are devoid of any kind of fossil as they are formed from the molten rocks themselves.
  - **Statement 2 is Correct:** Igneous rocks can be formed both on the surface and interior of the Earth. When the process of cooling and solidification happens in the Earth's crust, it forms Plutonic Rocks and when on the surface of the Earth, it forms Volcanic Rocks.
  - **Statement 3 is Incorrect:** Marble and Quartzite are metamorphic rock.

12.

**Answer: B****Explanation:**

- **Statement 1 is Correct**
- **Statement 2 is Incorrect:** Natural levees and point bars are some of the important landforms found associated with floodplains. Natural levees are found along the banks of large rivers. They are low, linear and parallel ridges of coarse deposits along the banks of rivers, quite often cut into individual mounds. Point bars are found on the concave side of meanders of large rivers and are sediments deposited in a linear fashion by flowing waters along the bank.

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**13. Answer: A**

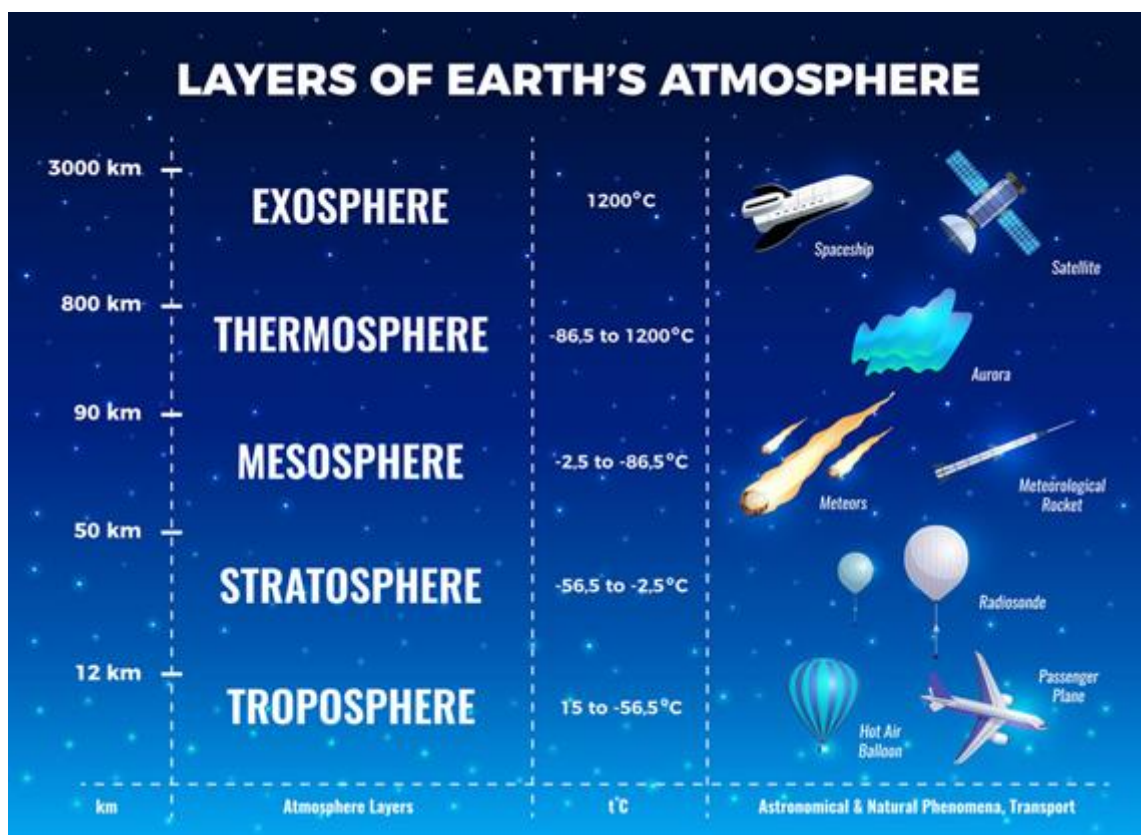
**Explanation:**

- Carbon dioxide is meteorologically a very important gas as it is transparent to the incoming solar radiation but opaque to the outgoing terrestrial radiation. It absorbs a part of terrestrial radiation and reflects back some part of it towards the Earth's surface. It is largely responsible for the *greenhouse effect*. The volume of carbon dioxide has been rising in the past few decades mainly because of the burning of fossil fuels.

**14.**

**Answer: B**

**Explanation:**



**15.**

**Answer: D**

**Explanation:**

- The amount and intensity of insolation vary during a day, season, and year. The factors that cause these variations in insolation are:
  - The rotation of the Earth on its axis.
  - The angle of inclination of the Sun's rays.

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- The length of the day.
- The transparency of the atmosphere.
- The configuration of land in terms of its aspect.
- The last two, however, have less influence.

16.

**Answer: C**

**Explanation:**

- **Statements 2 and 4 are Incorrect:** The pattern of planetary winds (General circulation of the atmosphere) largely depends on:
  - Latitudinal variation of atmospheric heating.
  - The emergence of pressure belts.
  - The migration of belts following the apparent path of the Sun.
  - The distribution of continents and oceans.
  - The rotation of the Earth.
- The atmosphere's general circulation also sets in motion the ocean water circulation, which influences the Earth's climate.

17.

**Answer: D**

**Explanation:**

- **Statement 1 is correct:** The intra-state migration is categorized into four types – rural to rural, rural to urban, urban to urban and urban to rural. In India, out of the total number of persons registered as "migrants" in the 2011 Census, only 11.91% (5.43 crore) had moved to one state from another, while nearly 39.57 crores had moved within their states. The stream was dominated by female migrants in all four categories. Most of these were migrants related to marriage.
- **Statement 2 is correct:** In the context of inter-state migration, men predominate the rural to the urban stream of inter-state migration due to economic reasons. But at the same time, females predominate the streams of short distance rural to rural inter-state migration.

18.

**Answer: C**

**Explanation:**

- **Statement 1 is correct:** The level of urbanization is measured in terms of the percentage of the urban population to the total population. In India, there has been a consistent growth in the urban population in the last few decades. Percentage of the urban population in the country –

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CENSUS YEAR	% OF THE TOTAL POPULATION LIVING IN URBAN AREAS
1981	23.34 per cent
1991	25.71 per cent
2001	27.78 per cent
2011	31.16 per cent

- **Statement 2 is correct:** The growth rate of urbanization has slowed down during the last two decades.

CENSUS YEAR	DECENNIAL GROWTH RATE OF URBANIZATION
1991	36.47 per cent
2001	31.13 per cent
2011	31.08 per cent

**NOTE: SINCE THE 2021 CENSUS IS NOT CONDUCTED AND OFFICIAL DATA IS NOT YET AVAILABLE. (AS OF APRIL 2022)**

19.

Answer: A

Explanation:

- **Statement 1 is correct:** Water is a cyclic resource with abundant supplies on the globe. Approximately 71 per cent of the Earth's surface is covered with it, but freshwater constitutes only about 3 per cent of the total water.
- **Statement 2 is incorrect:** A very small proportion of fresh water is effectively available for human use. The availability of fresh water varies over space and time.

20. Answer: B

Explanation:

- For effective treatment of a disease, early diagnosis and understanding of its pathophysiology is very important. Using conventional methods of diagnosis (serum and urine analysis, etc.) early detection is not possible. Recombinant DNA technology, Polymerase Chain Reaction (PCR) and Enzyme-Linked Immuno-sorbent Assay (ELISA) are some of the techniques that serve the purpose of early diagnosis.

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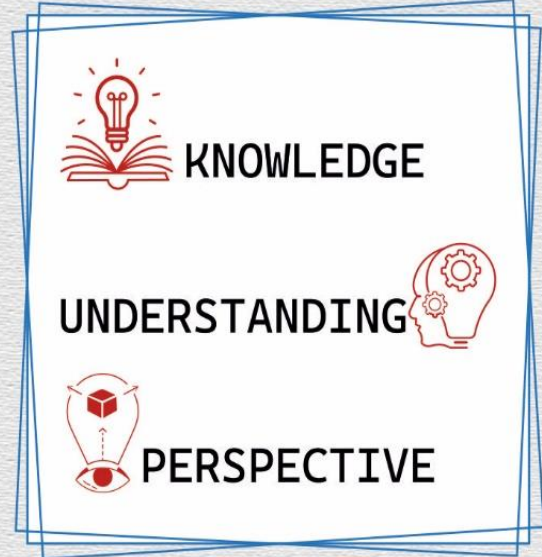
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21.

**Answer: C**

**Explanation:**

- Activities associated with primary economic activity include agriculture (both subsistence and commercial), mining, forestry, grazing, hunting and gathering, fishing, and quarrying. Some of them are related to market activities.

22.

**Answer: C**

**Explanation:**

- In the case of disguised unemployment, the earning of family is not impacted as much as in case of unemployment because in the situation of unemployment earning is zero, while in the case of disguised employment earning and work is not as per the ability of manpower.

23.

**Answer: D**

**Explanation:**

- After 1991, in terms of percentage, it decreases, whereas in terms of number of people in it, it is also decreasing.
- Social exclusion is not a result but cause of poverty.
- India's accepted average calorie requirement is 2400 calories per person per day in rural areas and 2100 calories per person per day in urban areas.

24.

**Answer: C**

**Explanation:**

- It was set up with the purpose to provide loans to countries whose infrastructure was destroyed by the war.
- It was set up to help countries eliminate poverty and achieve sustainable human development.

25.

**Answer: A**

**Explanation:**

- The first two statements are correct, but statement 3 is incorrect.
- Suez Canal was opened in 1856, and the questions is asking about the first half of the 19<sup>th</sup> (1800-1850) century. Hence, statement 3 is incorrect.

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26.

Answer: C

Explanation:

- Prokaryotic cells are comparatively smaller and much simpler than eukaryotic cells. The other defining characteristic of prokaryotic cells is that it does not possess membrane-bound cell organelles such as a nucleus. Reproduction happens through the process of binary fission.
- Prokaryotes do not have mitochondria. Mitochondria are only found in eukaryotic cells.
- Structurally, eukaryotes possess a cell wall, which supports and protects the plasma membrane. The cell is surrounded by the plasma membrane, and it controls the entry and exit of certain substances.
- The nucleus contains DNA, which is responsible for storing all genetic information. The nucleus is surrounded by the nuclear membrane. **Hence, statements 1 and 3 are incorrect.**

27.

Answer: B

Explanation:

- **Myopia** is also known as near-sightedness. A person with myopia can see nearby objects clearly but cannot see distant objects distinctly. A person with this defect has a far point nearer than infinity. Such a person may see clearly up to a distance of a few metres. In a myopic eye, the image of a distant object is formed in front of the retina and not at the retina itself. This defect may arise due to excessive curvature of the eye lens or elongation of the eyeball. This defect can be corrected by using a concave lens of suitable power. A concave lens of suitable power will bring the image back onto the retina, and thus the defect is corrected. **Hence statement 1 is not correct.**
- **Hypermetropia** is also known as far-sightedness. A person with Hypermetropia can see distant objects clearly but cannot see nearby objects distinctly. The near point, for the person, is farther away from the normal near point (25 cm). Such a person has to keep a reading material much beyond 25 cm from the eye for comfortable reading. This is because the light rays from a close by the object are focussed at appointing behind the retina. This defect arises either because the focal length of the eye lens is too long or the eyeball has become too small. This defect can be corrected by using a convex lens of appropriate power. Eyeglasses with converging lenses provide the additional focusing power required for forming the image on the retina. **Hence statement 2 is correct.**
- **Presbyopia**- The power of accommodation of the eye usually decreases with ageing. For most people, the near point gradually recedes away. They find it difficult to see nearby objects comfortably and distinctly without corrective eyeglasses. This defect is called Presbyopia. It arises due to the gradual weakening of the ciliary muscles and diminishing flexibility of the eye lens. Sometimes, a person may suffer from both myopia and Hypermetropia. Such people often require bi-focal lenses. A common type of bi-focal lenses consists of both concave and convex lenses. The upper portion consists of a

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concave lens. It facilitates distant vision. The lower part is a convex lens. It facilitates near vision.

28.

**Answer: D**

**Explanation:**

- Klinefelter syndrome is a genetic condition in which a boy is born with an extra X chromosome. Instead of the typical XY chromosomes in men, they have XXY, so this condition is sometimes called XXY syndrome. Klinefelter's syndrome isn't inherited but rather occurs only as a result of a random genetic error after conception. Males born with Klinefelter's syndrome may have low testosterone and reduced muscle mass, facial hair and body hair. Most males with this condition produce little or no sperm. **Hence, both statements are incorrect.**

29.

**Answer: B**

**Explanation:**

- For the solids whose volume decreases on melting into liquid form, an increase in pressure will lower down the melting point. While for the solids whose volume increases on melting into liquid, an increase in pressure will increase their melting point. Hence, ice melts at temperature lower than zero degree Celsius. **Hence, option B is the correct answer.**

30.

**Answer: B**

**Explanation:**

- The interplay of light with objects around us gives rise to several spectacular phenomena in nature. The blue colour of the sky, the colour of water in deep sea, the reddening of the Sun at sunrise and the sunset are some of the wonderful phenomena.
- The scattering of light helps us to understand the bluish colour of the sky and the reddish appearance of the Sun at the sunrise or the sunset. Light from the Sun near the horizon passes through thicker layers of air and larger distance in the Earth's atmosphere before reaching our eyes. However, light from the Sun overhead would travel relatively shorter distance. At noon, the Sun appears white as only a little of the blue and violet colours are scattered. **Hence, Statement 1 is not correct.**
- Most of the blue light and shorter wavelengths are scattered away by the particles near the horizon. Therefore, the light that reaches our eyes is of longer wavelengths. This gives rise to the reddish appearance of the Sun. **Hence, Statement 2 is correct.**

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31.

Answer: B

Explanation:

- **Statement 1 is correct:** Zeolites are highly porous, 3-D meshes of silica and alumina.
- **Statement 2 is correct:** They occur where volcanic outflows have met water in nature.
- **Statement 3 is incorrect:** They are commercially used as adsorbents in oxygen concentrators. Interaction between the negatively charged zeolite and the asymmetric nucleus (quadrupole moment) of nitrogen causes it to be preferentially adsorbed on the surface of the zeolite. Oxygen remains free, and is thus enriched.

32.

Answer: D

Explanation:

- A catalyst is defined as any substance that changes the speed of a chemical reaction, does not appear in the final resultant product, and undergoes no (permanent) changes. E.g. enzymes, metals, U.V. rays etc.

Note: In organic chemistry, the reagent is a chemical ingredient introduced to cause the desired transformation of an organic substance.

33.

Answer: D

Explanation:

- GSLV uses solid fuel in the first stage with another liquid-fuel second stage. The second stage is followed by a third stage known as Cryogenic Upper Stage (CUS).
- Liquid Oxygen (LOX) and Liquid Hydrogen (LH<sub>2</sub>) is used as fuel in Cryogenic Upper Stage (CUS).

34.

Answer: C

Explanation:

1. Bosphorus Strait - The Black Sea and the Sea of Marmara
2. Dardanelles Strait - The Aegean Sea and the Sea of Marmara
3. Kerch Strait - The Black Sea and the Sea of Azov

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35.

Answer: B

Explanation:

- In March 2020, pursuant to the announcement of the Pradhan Mantri Garib Kalyan Package (PMGKP) to ameliorate the hardships faced by the poor and needy due to economic disruptions caused by the COVID-19 outbreak in the country, the Government of India started the implementation of "Pradhan Mantri Garib Kalyan Anna Yojana (PM-GKAY)", so that the poor and vulnerable beneficiaries under NFSA do not suffer on account of the non-availability of food grains during the unprecedented time of crisis. **Statement 1 is correct.**
- Under this special scheme, about 81 Crore NFSA beneficiaries covered under both categories of NFSA, namely Antyodaya Anna Yojana (AAY) and Priority Householders (PHH), are being provided with an additional quota of free-of-cost foodgrains (Rice/Wheat) at a scale of 5 Kg per person per month, over and above their regular monthly entitlements. **Therefore, statement 2 and 3 are correct but 4 is incorrect.**

36.

Answer: C

Explanation:

- The first cotton mill in India was set up as a spinning mill in Bombay in 1854. From the early nineteenth century, Bombay had grown as an important port for the export of raw cotton from India to England and China. It was close to western India's vast black soil tract, where cotton was grown. When the cotton textile mills came up, they could easily get supplies of raw material. **Hence, statement 1 is correct.**

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- The first major spurt in the development of cotton factory production in India was during the First World War when textile imports from Britain declined and Indian factories were called upon to produce cloth for military supplies. **Hence, statement 2 is correct.**

37.

**Answer: C**

**Explanation:**

- The Khilafat Movement (1919-1920) was a movement of Indian Muslims, led by Muhammad Ali and Shaukat Ali, which demanded the following:
  - The Turkish Sultan or Khalifa must retain control over the Muslim sacred places in the erstwhile Ottoman Empire.
  - The jazirat-ul-Arab (Arabia, Syria, Iraq, and Palestine) must remain under Muslim sovereignty; and the Khalifa must be left with sufficient territory to enable him to defend the Islamic faith.
  - The Congress supported the movement and Mahatma Gandhi sought to conjoin it to the Non-cooperation Movement.

38.

**Answer: C**

**Explanation:**

- It has often been said that Congress was "moderate" in its objectives and methods in the first twenty years. During this period, it demanded a greater voice for Indians in the government and in administration. It wanted the Legislative Councils to be made more representative, given more power, and introduced in provinces where none existed. It demanded that Indians be placed in high positions in the government. The demand for Indianisation of the administration was part of a movement against racism. **Hence, statements 1 and 2 are correct.**
- The early Congress also raised a number of economic issues. It declared that British rule had led to poverty and famines: an increase in the land revenue had impoverished peasants and zamindars, and exports of grains to Europe had created food shortages. Congress demanded a reduction of revenue, a cut in military expenditure, and more funds for irrigation. It passed many resolutions on the salt tax, treatment of Indian labourers abroad, and the sufferings of forest dwellers – caused by an interfering forest administration. Despite being a body of the educated elite, all this shows that the Congress did not talk only on behalf of professional groups, zamindars, or industrialists. **Hence, statement 3 is incorrect.**

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39.

Answer: B

Explanation:

- If we analyze the process of annexation of Indian states by the East India Company from 1757 to 1857, certain key aspects emerge. The Company rarely launched a direct military attack on an unknown territory. Instead, it used various political, economic, and diplomatic methods to extend its influence before annexing an Indian kingdom.
- When Richard Wellesley was Governor-General (1798-1805), the Nawab of Awadh was forced to give over half of his territory to the Company in 1801, as he failed to pay for the "subsidiary forces." Hyderabad was also forced to cede territories on similar grounds. **Hence, pair 1 is incorrectly matched and pair 2 is correctly matched.**
- The Company resorted to direct military confrontation when it saw a threat to its political or economic interests. This was the case in the southern Indian state of Mysore. **Hence, pair 3 is correctly matched.**

40.


Answer: B

Explanation:

- Under Lord Hastings (Governor-General from 1813 to 1823), a new policy of "paramountcy" was initiated. Now the Company claimed that its authority was paramount or supreme; hence its power was greater than that of Indian states. In order to protect its interests, it was justified in annexing or threatening to annex any Indian kingdom. **Hence, statement 2 is correct.**
- This process, however, did not go unchallenged. For example, when the British tried to annex the small state of Kitor (in Karnataka today), Rani Channamma took to arms and led an anti-British resistance movement. She was arrested in 1824 and died in prison in 1829. **Hence, statement 1 is incorrect.**

CSE 2020

AIR  
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**SALONI VERMA**

I am Saloni Verma, AIR 70, UPSC CSE 2020. I was a student of the Ethics test series (2020) at Lukmaan IAS. The quality of content, evaluation and overall guidance by Ansari sir was very helpful. Overall, I appreciate the support provided by the entire team of Lukmaan IAS for contributing to this success.

MARKS IN  
ETHICS  
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Saloni Verma  
AIR 70, CSE 2020  
Date: 28/9/2021

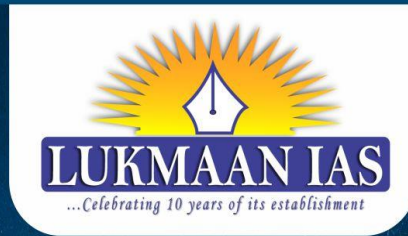
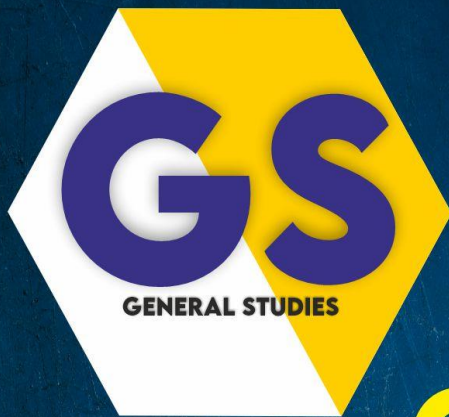
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41.

**Answer: D****Explanation:**

- A secular state like India can promote all religions equally but cannot privilege any over another. This is the Indian way of secularism as against the Western notion of secularism.

42.

**Answer: D****Explanation:**

- Effectiveness of a Constitution means the achievement of the objectives enshrined in it. A written constitution that provides a strong central government with parliamentary sovereignty will not necessarily help achieve this objective. An unwritten constitution can also achieve its objectives. A federal system with power-sharing arrangement or a constitution with judicial supremacy can also achieve the objectives of the Constitution.

43.

**Answer: D****Explanation:**

- State means a political entity having four features: sovereignty (internal as well as external), territory, population and government. Hence, none of the given statements is correct about the state.

44.

**Answer: D****Explanation:**

- India is a federation because of an independent judiciary that acts as an arbiter of federal disputes and protects the division of power between the Union and states.

45.

**Answer: D****Explanation:**

- **Statement 1 is incorrect:** Rights accrue to both citizens and non-citizens and also this Right can also be claimed against the private parties.
- **Statement 2 is incorrect:** Rights are considered to be superior than duties. For instance fundamental rights are enforceable while fundamental duties cannot.

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46.

Answer: C

Explanation:

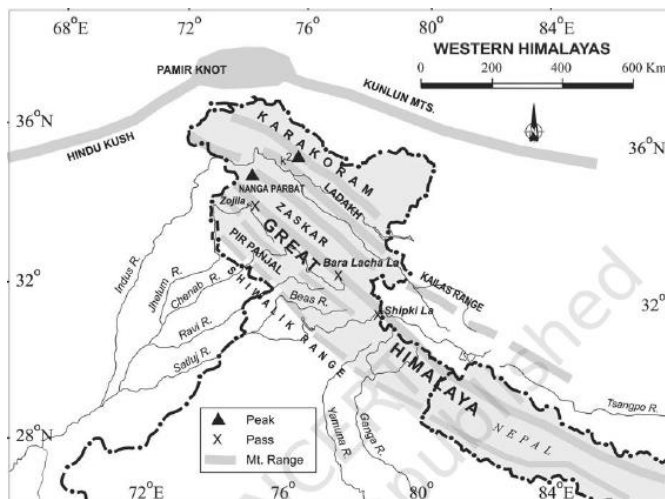
- **Statement 1 is correct:** Alluvial soil is generally poor in phosphorus and rich in potash.
- **Statement 2 and 3 are incorrect:** Khadar is the new alluvium deposited by floods annually, which enriches the soil by depositing fine silts. Bhangar represents a system of older alluvium deposited away from the flood plains.
- **Statement 4 is correct:** The Khadar and Bhangar soils contain calcareous concretions (Kankars).

47.

Answer: C

Explanation:

- Refer to the Picture given below



48.

Answer: A

Explanation:

- **Pair 1 is correctly matched:** It comprises a series of ranges such as the Karakoram, Ladakh, Zaskar and Pir Panjal. The northeastern part of the Kashmir Himalayas is a cold desert between the Greater Himalayas and the Karakoram ranges. Between the Great Himalayas and the Pir Panjal range,
- Lies the world-famous Valley of Kashmir and the famous Dal Lake. Important glaciers of South Asia, such as the Baltoro and Siachen, are also found in this region. The Kashmir

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Himalayas are also famous for Karewa formations, which are useful for the cultivation of Zafran, a local variety of saffron.

- **Pair 2 is incorrectly matched:** The two distinguishing features of the Uttarakhand Himalayan region from the point of view of physiography are the ‘Shiwalik’ and ‘Dun formations’. Some important duns located in this region are the Chandigarh-Kalka dun, Nalagarh dun, Dehradun, Harike dun and the Kota dun, etc. Dehradun is the largest of all the duns, with an approximate length of 35-45 km and a width of 22-25 km.
- **Pair 3 is incorrectly matched:** Compared to the other sections of the Himalayas, Sikkim Himalayas and the Arunachal Himalayas are conspicuous by the absence of the Shiwalik formations. In place of the Shiwaliks here, the ‘duar formations’ are important, which have also been used for the development of tea gardens. Sikkim and Darjiling Himalayas are also known for their scenic beauty and rich flora and fauna, particularly various types of orchids.

49.

**Answer: C**

**Explanation:**

- Statements 3 and 4 are matched incorrectly. The correct match is:

<b>Nativity</b>	Refers to the number of births during a given period in the population that are added to the initial density.
<b>Mortality</b>	The number of deaths in the population during a given period.
<b>Immigration</b>	The number of individuals of the same species that have come into the habitat from elsewhere during the time period under consideration.
<b>Emigration</b>	The number of individuals of the population who left the habitat and gone elsewhere during the time period under consideration.

50.

**Answer: D**

**Explanation:**

- The environment is able to perform the absorptive functions without any interruption as long as the demand on these functions is within its carrying capacity. This implies that the resource extraction is not above the rate of regeneration of the resource and the wastes generated are within the assimilating capacity of the environment. When this is not so, the environment fails to perform its third and vital function of life sustenance, resulting in an environmental crisis.

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51.

Answer: B

Explanation:

- **Statement 1 is incorrect:** The flow of energy from producer to top consumers through Trophic levels is called energy flow, which is **always unidirectional**. Energy always flows from lower (producer) to higher consumer (herbivore, carnivore etc) trophic level.
- **Statement 2 is correct:** During the energy flow through trophic levels, there is always a loss of energy in the form of unusable heat at each trophic level, accounting for energy reduction from lower to higher trophic levels.

52.

Answer: C

- **Explanation:** The intensity of bacterial activity shows up differences between soils of cold and warm climates. Humus accumulates in cold climates as bacterial growth is slow. With undecomposed organic matter, because of low bacterial activity, layers of peat develop in sub-arctic and tundra climates.
- In humid tropical and equatorial climates, bacterial growth and action is intense and dead vegetation is rapidly urbanized leaving very low humus content in the soil.

53.

Answer: D

Explanation:

All statements are correct:

- **Statement 1 is correct:** Cyanobacteria, commonly known as blue-green algae, inhabit nearly all illuminated environments on Earth and play key roles in the carbon and nitrogen cycle of the biosphere. In general, cyanobacteria can use various inorganic and organic sources of combined nitrogen, such as nitrate, nitrite, ammonium, urea, or some amino acids. Several cyanobacterial strains are also capable of diazotrophic growth.
- **Statement 2 is correct:** The given statement is the definition of nitrogen fixation. Bacteria and other soil organisms take gaseous nitrogen from the air and convert it into a chemical form that plants can use.
- **Statement 3 and 4 are correct.**

54.

Answer: B

Explanation:

- **Pair 1 is matched incorrectly:** Tundra- Devoid of trees except for stunted shrubs in the southern part of the tundra biome, ground flora includes lichen, mosses and sedges. The typical animals are reindeer, arctic fox, polar bear, snowy owl, lemming, arctic hare, and ptarmigan. Reptiles and amphibians are almost absent.

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- **Pairs 2, 3 and 4 are matched correctly:** Savannah – Grasses with scattered trees and fire-resisting thorny shrubs. The fauna includes a great diversity of grazers and browsers such as antelopes, buffaloes, zebras, elephants and rhinoceros; the carnivores include lion, cheetah, and hyena; and mongoose, and many rodents.
- Desert- The flora is drought resistance vegetation such as cactus, euphorbia, and sagebrush. Fauna: Reptiles, Mammals and birds.
- Taiga- The dominating vegetation is coniferous evergreen, mostly spruce, with some pine and firs. The fauna consists of small seed-eating birds, hawks, fur-bearing carnivores, little mink, elks, puma, Siberian tiger, wolverine, wolves etc.

55.

**Answer: A**

**Explanation:**

- **Statement 1 is correct:** Brundtland Commission published its "Our Common Future" report in 1987. It defined sustainable development as the development that meets the present's needs without compromising the ability of future generations to meet their own needs. The United Nation established this commission as the World Commission on Environment and Development.
- **Statement 2 is incorrect:** Sustainable growth was one of the themes of the Twelfth (not eleventh) five-year plan in India. The duration of this plan was 2012 to 2017. The main theme of this plan was "Faster, More Inclusive and Sustainable Growth". Sustainable growth takes care of ecological, social and economic aspects of a development process in a country.

56.

**Answer: D**

**Explanation:**

- Unskilled workforce is also working in the Service sector like workers in the gig economy.
- Most people are working in the primary sector (agriculture and allied services).

57.

**Answer: B**

**Explanation:**

- Argument no. 4 is not appropriate because the rich-poor divide has continuously increased in India in recent times.

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58.

Answer: D

Explanation:

- At the time of independence, Indian leaders were inspired by the socialist model, and they adopted a five-year plan from USSR. Hence, argument 4 is incorrect.
- Nehru, and many other leaders and thinkers of the newly independent India, sought an alternative to the extreme versions of capitalism and socialism. Basically, sympathizing with the socialist outlook, they found the answer in an economic system that combined the best features of socialism without its drawbacks.

59.

Answer: D

Explanation:

- First outcome is not the positive outcome of capitalist economy but the negative outcome of the capitalist economy.
- Other two outcomes are the positive outcomes of capitalist economy.

60.

Answer: D

Explanation:

- All the above statements are correct.
  - During the reforms period, the growth of agriculture declined.
  - Since 1991, public investment in the agriculture sector, especially in infrastructure, includes irrigation, power, roads, market linkages, and research and extension.
  - The per capita income in the agriculture sector has increased after the reforms.

61.

Answer: A

Explanation:

- **Statement 1 is correct:** Sound is a mechanical wave and needs a material medium like air, water, steel, etc. for propagation. It cannot travel through a vacuum.
- **Statement 2 is not correct:** In these waves the individual particles of the medium move in a direction parallel to the direction of propagation of the disturbance. The particles do not move from one place to another, but they oscillate back and forth about their rest position. This is exactly how a sound wave propagates, hence sound waves are longitudinal waves.
- There is also another type of wave, called a transverse wave. A transverse wave particle does not oscillate along the direction of wave propagation but oscillate up and down about their mean position as the wave travels. Thus, a transverse wave is the one in

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which the individual particles of the medium move about their mean positions in a direction perpendicular to the direction of wave propagation

- **Statement 3 is not correct:** The speed of sound remains almost the same for all frequencies in a given medium under the same physical conditions.

62.

**Answer: C**

**Explanation:**

- **Measles** is a human disease and is not known to occur in animals. A virus causes measles in the paramyxovirus family, and it is normally passed through direct contact and through the air. The virus infects the respiratory tract, then spreads throughout the body.
- **Syphilis** is a bacterial sexually transmitted infection (STI) caused by *Treponema pallidum* which results in substantial morbidity and mortality, and it is curable.
- **Ringworm** of the body (tinea corporis) is a rash caused by a fungal infection. It's usually an itchy, circular rash with clearer skin in the middle.
- **Anthrax** is an infectious disease that's caused by bacteria. It usually only affects farm animals like cows and sheep. But it's possible to become infected if you're in contact with infected animals or products that come from them.
- **Botulism** It is a rare poisoning caused by toxins produced by *Clostridium botulinum* bacteria. It can occur in infants, be spread in food or infect a wound. **Hence, option C is the correct answer.**

63.

**Answer: B**

**Explanation:**

- White-Fi, also often referred to as Super Wi-Fi and White Space Wi-Fi, is a method for creating wireless networks within analog TV broadcast frequencies instead of the usual 2.4 GHz radio frequency used by regular Wi-Fi networks. White-Fi technology uses the unused spectrum in frequencies utilized to broadcast television signals and use it for the internet. In technology parlance, these unused spectrum spaces are called White Space.
- **Benefits of White-fi technology:**
  - The main benefit of white space-based Wi-Fi is its ability to cover a much longer distance than traditional Wi-Fi. On average, a White-Fi signal can blanket a surrounding area of around seven miles which means that establishing a network can be much cheaper and would require less effort and equipment to develop.
  - The possible range of White-Fi makes the technology a practical solution for bringing internet connectivity to regions that lack an established telecommunications network.

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- White-Fi is resistant to signal-blocking. A building wall may block a regular Wi-Fi broadcast, but it would do very little to a White-Fi signal that physical obstacles aren't affected as much.
- **Disadvantages of White-fi technology:**
  - While faster than 4G networks, White-Fi is being outpaced by newer 5G technologies which can promise download speeds of at least 20 Gbps.
  - Because professional microphones also use white space for performances and presentations, there is the potential for a White-Fi internet signal to affect the functionality of such equipment.
  - You can't use a regular Wi-Fi modem and router to set up a White-Fi network. Instead, businesses and individuals wishing to set it up and use it need entirely new hardware.
- **Hence, option B is the correct answer.**

64.

**Answer: B**

**Explanation:**

- Mass is the quantity of matter contained in the body. No matter where you are at a given moment in time, mass is constant. It is independent of gravity. However, the weight of a body given by:  $\text{Weight} = \text{Mass} \times \text{gravity}$ , differs from place to place with changing the value of gravity. **Hence, statement 1 is not correct.**
- Sound waves needs a medium through which they can propagate. Since there is no material medium on the moon due to absence of atmosphere, one cannot hear any sound on the moon. **Hence, statement 2 is correct.**

65.

**Answer: C**

**Explanation:**

- **Both statement 1 and 2 are correct.**
  - When a satellite reaches exactly 42,164 kilometers from the center of the Earth (about 36,000 kilometers from Earth's surface), it enters a spot in which its orbit matches Earth's rotation. Because the satellite orbits at the same speed that the Earth is turning, the satellite seems to stay in place over a single longitude, though it may drift north to south. This special, high Earth orbit is called geosynchronous.
  - A satellite in a circular geosynchronous orbit directly over the equator (eccentricity and inclination at zero) will have a geostationary orbit that does not move at all relative to the ground. It is always directly over the same place on the Earth's surface.
  - A geostationary orbit is extremely valuable for weather monitoring because satellites in this orbit provide a constant view of the same surface area. Because geostationary

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satellites are always over a single location, they can also be useful for communication (phones, television, radio).

- Example: Among the constellation of seven satellites of NavIC, three satellites are located in suitable orbital slots in the geostationary orbit. The remaining four are located in geosynchronous orbits with the required inclination equatorial crossings in two different planes. All the satellites of the constellation are configured identically.

66.

Answer: A

Explanation:

- 'Green hydrogen', the emerging novel concept, is a zero-carbon fuel made by electrolysis using renewable power from wind and solar to split water into hydrogen and oxygen.
- 'Zero emission' of carbon dioxide when used as the source of energy.

Note: Black hydrogen is produced by use of fossil fuel, whereas pink hydrogen is produced through electrolysis but using energy from nuclear power sources.

67.

Answer: D

Explanation:

- Mullaperiyar, Parambikulam, Thunakadavu and Peruvuripallam are dams located in Kerala but owned, operated and maintained by Tamil Nadu.

68.

Answer: C

Explanation:

- **Statement 1 is incorrect:** India State of Forest Report is an assessment of India's forest and tree cover, **published every two years by the Forest Survey of India** under the Ministry of Environment, Forests and Climate Change. The first survey was published in 1987, and ISFR 2021 is the 17th.
- ISFR 2021 has found that there is an increase of 1,540 square kilometres (0.22%) of forest cover and 721 sq km (0.76%) of tree cover compared to the 2019 report.
- **Statement 2 is incorrect: The Northeast reported the biggest overall loss of forest cover at 1,020 sq km.** This decline caused by natural calamities, shifting agriculture and deforestation will affect the region's water resources and will increase landslides, as per the report.
- **Statement 3 is correct: ISFR 2021 assessed forest cover in the tiger reserves for the first time.** Of 52 tiger reserves, 20 have recorded an increase in forest cover since 2011, while it decreased in 32 tiger reserves during the same period.

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69.

Answer: B

Explanation:

- **The possible impact of the Ukraine-Russia war on the Indian Economy includes:**
  - High crude oil and natural gas prices lead to overall increase in inflation.
  - Higher import bill due to crude oil and natural gas prices may widen the current account deficit.
  - Fertilizer supply/import from Russia and Ukraine to India is affected and thus will increase the cost of fertilizers in India (high demand, low supply).
  - The Ukraine-Russia conflict is expected to further impact the already stressed global semiconductor supply as raw materials exported from the two countries, neon gas, chemical C4F6 and palladium, are critical for semiconductor manufacturing. This will negatively impact the Indian electronics and automobile industry.

70.

Answer: C

Explanation:

- **Statement 1 is correct:** National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat) seeks to create an enabling environment to ensure the universal acquisition of foundational literacy and numeracy so that every child achieves the desired learning competencies in reading, writing and numeracy by the end of Grade 3, by 2026-27.
- **Statement 2 is incorrect:** Although the National Education Policy had included a 2025 deadline to achieve the goal, the Centre has pushed back the target date to 2026-27, given that COVID-19 has already disrupted two academic years.
- **Statement 3 is correct:** It will be funded through Samagra Shiksha.

71.

Answer: B

Explanation:

- Features of Harappan house planning were:
  - Generally, houses were either one or two storeys high, with rooms built around a courtyard. Most houses had a separate bathing area, and some had wells to supply water.

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72.

Answer: C

Explanation:

- The most important idea in Jainism is that the entire world is animated: even stones, rocks, and water have life. Non-injury to living beings, especially humans, animals, plants and insects, is central to Jaina's philosophy. According to Jaina teachings, the cycle of birth and rebirth is shaped through karma. Asceticism and penance are required to free oneself from the cycle of karma. This can be achieved only by renouncing the world; therefore, monastic existence is necessary for salvation. **Hence, statements 1 and 4 are correct.**
- According to Buddhist philosophy, the world is transient (anicca) and constantly changing; it is also soulless (anatta) as there is nothing permanent or eternal in it. **Hence, statements 2 and 3 are incorrect.**

73.

Answer: B

Explanation:

- R.C. Dutt is remembered for his monumental work, The Economic History of India (1902), and his translation of the Rig Veda in Bengali. In 1894, he was appointed Commissioner of the Burdwan Division, probably the first Indian native to officiate in that capacity though only for a year. In 1897, he took early retirement from the ICS. Post-retirement, he plunged into writing and public speaking, quite often in support of the members of the London Indian Society or the East Indian Association contesting elections to the House of Commons. He also served as the London Correspondent for a Calcutta-based journal, The Indian Mirror. In 1899, he was invited to be the President of the Lucknow session of the Indian National Congress.

74.

Answer: D

Explanation:

- Mongol attacks on the Delhi Sultanate increased during the reign of Alauddin Khalji. This forced Allaudin Khalji to mobilize a large standing army in Delhi. He took the following steps:
- The soldiers had to be fed. This was done through the produce collected as tax from lands between the Ganga and Yamuna. The tax was fixed at 50 per cent of the peasant's yield. **Hence, statement 1 is correct.**
- The soldiers had to be paid. Alauddin chose to pay his soldiers salaries in cash rather than iqatas. The soldiers would buy their supplies from merchants in Delhi and it was thus feared that merchants would raise their prices. To stop this, Alauddin controlled

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the prices of goods in Delhi. Officers carefully surveyed prices, and merchants who did not sell at the prescribed rates were punished. **Hence, statement 2 is incorrect.**

- Alauddin constructed a new garrison town named Siri for his soldiers. **Hence, statement 3 is incorrect.**
- 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. This helped the Sultan accumulate as many resources as possible to maintain a standing army. **Hence, statement 4 is correct.**

75.

Answer: D

Explanation:

- Chola inscriptions mention several categories of land:
  - **Vellanvagai:** land of non-Brahmana peasant proprietors
  - **Brahmadeya:** land gifted to Brahmanas
  - **Shalabhoga:** land for the maintenance of a school
  - **Devadana, tirunamattukkani:** land gifted to temples
  - **Pallichchandam:** land donated to Jaina institutions

76.

Answer: D

Explanation:

- Judicial activism has had manifold impact on the political system. It has democratized the judicial system by giving not just to individuals but also groups access to the courts. It has forced executive accountability. It has also tried to make the electoral system much freer and fairer. Hence, all the options are correct.

77.

Answer: D

Explanation:

- **Statement 1 is incorrect:** All rights that have been conferred to the persons and enshrined in the Constitution of India but are not under the domain of Part III of the Constitution are said to be Constitutional Rights. A constitutional right becomes a legal right only when a law is enacted to effect it. For instance, the Right to vote.
- **Statement 2 is incorrect:** All legal rights need not be Constitutional rights, for instance, right to food, right to work etc.

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78.

Answer: A

Explanation:

- Fraternity means brotherhood among people and community, which will be adversely affected by the promotion of one language and policy of centralization as these steps will lead to undermining diversity. **Hence, the answer is A.**

79.

Answer: C

Explanation:

- **Both the statements are correct.** The principle of collective responsibility represents ministerial accountability to the legislature of the country. Ministers are bound to support publicly the decisions made by the Cabinet as a whole and will show no disagreement with any decision made by the particular government outside the cabinet room.

80.

Answer: D

Explanation:

- The Constitution as a living document means that it can be amended subject to conditions, and it can also be expanded by judicial interpretation. It also involves the power of Parliament to make laws to give effect to its provisions. **Hence option D is incorrect.**

81.

Answer: A

Explanation:

- **Statement 1 is correct:** The terrestrial planets are smaller and thus have lower gravity. This is the reason that it could not hold the escaping gases and thus have rocky surfaces.
  - **Statement 2 is incorrect:** Jovian planets have thick atmosphere mainly consisting of Hydrogen and Helium as the solar winds were not all that intense to cause the removal of gases from the Jovian planets.
  - **Statement 3 is correct:** The terrestrial planets are made up of rocks and metals, so they have relatively higher densities than Jovian planets.
- ✓ Mercury, Venus, Earth and Mars are called the inner planets as they lie between the Sun and the belt of the asteroids. They are also called Terrestrial Planets i.e. Earth-like and the rest four are called Jovian planets i.e. Jupiter like.

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82.

Answer: B

Explanation:

- **Statement A is correct:** Abyssal plains are the largest habitat on Earth. They are generally found between the foot of a continental rise and a mid-ocean ridge. An abyssal plain is an underwater plain on the deep ocean floor, usually found at depths between 3,000 to 6,000 meters.
- **Statement B is incorrect:** The waters along the continental shelf are usually very productive ecosystems. This is due to sunlight and nutrients from upwelling and land water runoff.
- Abyssal plains are less productive ecosystems than those along the continental shelf. This is mainly because sunlight does not penetrate to the sea floor and supports fewer plants, making these deep, dark ecosystems less productive.
- **Statement C is correct:** The continental slope connects the continental shelf and the ocean basins. It begins where the bottom of the continental shelf sharply drops off into a steep slope. The gradient of the slope region varies between 2 to 5°. The depth of the slope region varies between 200 and 4000 m. The slope boundary indicates the end of the continents.
- **Statement D is correct:** The mid-ocean ridge system forms the longest and largest mountain range on Earth. The mid-ocean ridge consists of thousands of individual volcanoes or volcanic ridge segments which periodically erupt.

83.

Answer: C

Explanation:

- **Statement 1 is correct:** Animals that have had their DNA manipulated to possess and express an extra (foreign) gene are known as transgenic animals. Transgenic rats, rabbits, pigs, sheep, cows and fish have already been produced. Transgenic animals can be specifically designed to study how genes are regulated, and how they affect the normal functions of the body and its development, e.g., the study of complex factors involved in growth such as insulin-like growth factors.
- **Statement 2 is correct:** If a person is born with a hereditary disease, can corrective therapy be taken for such a disease? Gene therapy is an attempt to do this. Gene therapy is a collection of methods that allows the correction of a gene defect that has been diagnosed in a child/embryo. Here genes are inserted into a person's cells and tissues to treat a disease. Correction of a genetic defect involves delivery of a normal gene into the individual or embryo to take over the function of and compensate for the non-functional gene.

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84.

Answer: B

Explanation:

- **Statements 1 and 3 are correct:** Ecotone is an inter-junction between two or more diverse ecosystems and Edge effect is typically observed in Ecotone. Well-developed ecotones contain some organisms which are entirely different from that of the adjoining communities. Sometimes the number of species and the population density of some of the species is much greater in this zone than in either community. This is called the edge effect.
- **Statement 2 is incorrect:** Ecotone is a zone of junction between two or more diverse ecosystems. For e.g., the mangrove forests represent an ecotone between marine and terrestrial ecosystems. Other examples are – grassland, estuary and riverbank. It may be very narrow or quite wide, but not larger than a biome, a much larger entity.

85.

Answer: D

Explanation:

- **All pairs 1, 2 and 3 are correctly matched.**
- Decomposers break down complex organic matter into inorganic substances like carbon dioxide, water and nutrients and the process is called decomposition. Dead plant remains such as leaves, bark, flowers and dead remain of animals, including faecal matter, constitute detritus, which is the raw material for decomposition. The important steps in the process of decomposition are fragmentation, leaching, catabolism, humification and mineralization. Detritivores (e.g., earthworms) break down detritus (Dead plant remains such as leaves, bark, flowers and dead remain of animals, including faecal matter) into smaller particles. This process is called fragmentation. By the process of leaching, water-soluble inorganic nutrients go down into the soil horizon and get precipitated as unavailable salts. Bacterial and fungal enzymes degrade detritus into simpler inorganic substances. This process is called catabolism. It is important to note that all the above steps in decomposition operate simultaneously on the detritus.

86.

Answer: C

Explanation:

- Government receipts are divided into two groups—Revenue Receipts and Capital Receipts.
  - Capital receipts are the income received by the company which is non-recurring in nature. They are part of the financing and investing activities rather than operating activities. The capital receipts either reduces an asset or increases a liability. The receipts can be generated from the following sources:

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- ✓ Issue of Shares
  - ✓ The issue of debt instruments such as debentures.
  - ✓ Loan taken from a bank or financial institution.
  - ✓ Government grants.
  - ✓ Insurance Claim.
  - ✓ Additional capital introduced by the proprietor.
- Revenue Receipts are the receipts which arise through the core business activities. These receipts are a part of normal business operations that is why they occur again and again however its benefit can be enjoyed only in the current accounting year as its effect is short term. The income received from the day-to-day activities of business includes all the operations that bring cash into the business like:
- ✓ Revenue generated from the sale of inventory
  - ✓ Services Rendered
  - ✓ Discount Received from the creditors or suppliers
  - ✓ Sale of waste material/scrap.
  - ✓ Interest Received
  - ✓ Receipt in the form of dividend
  - ✓ Rent Received

87.

**Answer: B**

- Disguised unemployment is unemployment that does not affect aggregate economic output. It can refer to any part of the population that is not employed at full capacity.
  - It occurs when productivity is low and too many workers are filling too few jobs. Only the second case is related to the disguised unemployment in the above-given cases.
- Hence, the correct answer is B.**

88.

**Answer: C**

**Explanation:**

- The Gross National Income of India includes the income earned by Indians, whether living in India or living abroad.
  - Nokia is not an Indian company.
  - The person working in Saudi Arabia is Indian.
  - Infosys is an Indian company.
  - The teacher is not an Indian.

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89.

Answer: A

Explanation:

- The exchange rate of a currency is not an indicator of the economic strength of a country. The economic position of India in 2017 is far better than that of 1947, though there is a fall in the Rupee value.
- A devaluation means that more local currency is needed to purchase imports and exporters get more local currency.
- If the government or RBI fix the exchange rate of a currency (and does not allow any variations according to demand and supply forces in the market), such a system is called the Fixed Rate system. It is also called the Bretton Woods system or Pegged Currency System.

90.

Answer: D

Explanation:

- **Statement 1 is correct:** Among the three countries, Pakistan has the highest share of service sector in GDP (57%).
- **Statement 2 is correct:** India has the highest percentage of workforce in Agriculture (43%).
- **Statement 3 is correct:** Among the three countries, Pakistan has the lowest share of manufacturing in GDP (19%).

91.

Answer: C

Explanation:

- **Statement 1 is incorrect:** After independence, the percentage of employment primary sector decreases (74% to 44%) and the self-employed status also decreases (61% to 52%).
- **Statement 2 is incorrect:** After independence, the percentage of Regular Salaried employees has increased but there were many up and down for example, in 1972 the percentage of self-employed was 15%, in 1982 it was 13% and in 2012 it was 18%.

92.

Answer: B

Explanation:

- **Statement 1 is incorrect:** Both male and female are equally self-employed (52%).
- **Statement 2 is correct:** most employees are self-employed (58%) while in urban India most employees are Regular Salaried employees (47%).

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93.

Answer: B

Explanation:

- The phenomenon of mirage uses both refraction and total internal reflection (**hence, 1 and 2 are correct**)
- When the incident angle becomes larger, the refracted light will get closer and closer to the interface between the air and the glass. When it is larger than the critical angle, the light will only be reflected but not refracted. This phenomenon is called total internal reflection.
- Mirage happens when the ground is very hot and the air is cool. The hot ground warms a layer of air just above the ground. When the light moves through the cold air and into the layer of hot air it is refracted (bent).
- A layer of very warm air near the ground refracts the light from the sky nearly into a U-shaped bend due to total internal reflection. Our brain thinks the light has travelled in a straight line. Our brain doesn't see the image as bent light from the sky. Instead, our brain thinks the light must have come from something on the ground.

94.

Answer: C

Explanation:

- Biological control is the use of natural enemies (called bio-control agents) to reduce populations of pests such as insects and weeds. Parasites, pathogens, and predators are the primary groups used in biological control of insects. Natural enemy pathogens are microorganisms including certain bacteria, fungi, nematodes, protozoa, and viruses that can infect and kill the host. **Hence, option C is the correct answer.**

95.

Answer: C

Explanation:

- **Oxalic Acid:** It is a colorless, crystalline powder that is a strong organic acid. Oxalic acid has many roles as a bleach, metal polish, stain remover, and mordant. It is used as a Bleaching agent for Straw hats, Leather, and Wood. Oxalic acid acts as a reducing agent for metal oxides to remove tarnish as well as rust or ink stains. It is used commercially as a laundry rinse, wood-bleaching agent, and calcium remover. Oxalic acid can remove some paints and varnishes.
- **Sulphuric acid:** It is such an important industrial chemical that it is called the King of chemicals. Some of its major uses are as follows:
  - Sulphuric acid is used in car batteries.
  - It is used in the manufacturing of paints, drugs, dyes, and to produce fertilizers.
- **Ascorbic acid** is used as a nutritional supplement during deficiency states (scurvy).

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- **Formaldehyde** is a strong-smelling, colourless gas used in making building materials and many household products. It is used in pressed-wood products, such as particleboard, plywood, and fiberboard; glues and adhesives; permanent-press fabrics; paper product coatings; and certain insulation materials. **Hence, 2nd and 3rd pairs are correctly matched.**

96.

**Answer: C**

**Explanation:**

- **Web 1.0** – Web 1.0 is the world wide web or the internet that was invented in 1989. It became popular from 1993. In the Web 1.0 days, the internet was mostly static web pages where users would go to a website and then read and interact with the static information.
- **Web 2.0** – Web 2.0 started in some form in the late 1990s, though 2004 was when most of its features were fully available. It is still the age of Web 2.0 now. The differentiating characteristic of Web 2.0 compared to Web 1.0 is that users can create content. They can interact and contribute in the form of comments, registering likes, sharing and uploading their photos or videos and perform other such activities. Primarily, a social media kind of interaction is the differentiating trait of Web 2.0. Users can create and post their content on the internet.
- **Web 3.0** – Web3 will deliver “decentralized and fair internet where users control their own data”. Currently if a seller has to make a business to the buyer, both the buyer and seller need to be registered on a “shop” or “platform” like Amazon or Ebay or any such e-commerce portal.

97.

**Answer: C**

**Explanation:**

- **Statement 1 is correct:** Bhaskaravarman was the ruler of the Kamrupa kingdom.
- **Statement 2 is incorrect:** Harshavardhana of Kannauj was the contemporary and ally of Bhaskaravarman.
- **Statement 3 is correct:** Bhaskarabda is an era counted from the date of the accession of Bhaskaravarman.

98.

**Answer: B**

**Explanation:**

- Kaiser-i-Hind (*Teinopalpus imperialis*) literally means Emperor of India.
- This butterfly with a 90-120 mm wingspan is found in six states along the eastern Himalayas at elevations from 6,000-10,000 feet in well-wooded terrain.

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- The butterfly also flutters in Nepal, Bhutan, Myanmar, Laos, Vietnam and southern China. **Therefore, statement 1 is incorrect.**
- In 2021, the Arunachal Pradesh government declared it as State butterfly of Arunachal Pradesh. **Therefore, statement 2 is correct.**

99.

**Answer: D**

**Explanation:**

- CPSEs fulfilling the following criteria are eligible to be considered for grant of Maharatna status:
  - Having Navratna status.
  - Listed on the Indian stock exchange, with a minimum prescribed public shareholding under SEBI regulations.
  - An average annual turnover of more than Rs. 20,000 crores during the last three years.
  - An average annual net worth of more than Rs. 10,000 crores during the last three years.
  - An average annual net profit of more than Rs. 2,500 crore during the last 3 years.
  - The significant global presence or international operations.

100.

**Answer: D**

**Explanation:**

- Artificial intelligence refers to systems or machines that mimic human intelligence to perform tasks and can iteratively improve themselves based on the information they collect. AI manifests in a number of forms.
- Some Applications of Artificial intelligence are as follows:
  - Used in Radiosurgery and in another medical sector.
  - To determine the condition of soil in agriculture field and agriculture sector.
  - Disease diagnosis.
  - Text-to-speech conversion.
  - In weather prediction by Meteorological departments.
- **Hence, option D is the correct answer.**

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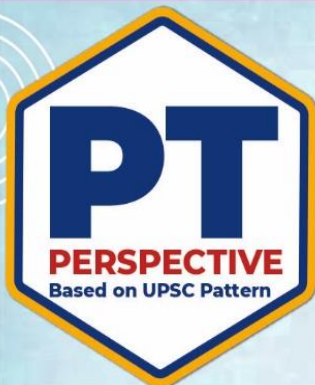
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<b>Public Admin. Test Series</b>	10 Tests	18 <sup>th</sup> June
<b>Ethics Test Series</b>	07 Tests	16 <sup>th</sup> June
<b>Essay Test Series</b>	07 Tests	17 <sup>th</sup> June
<b>Polity Test Series</b>	07 Tests	15 <sup>th</sup> June
<b>Sociology Test Series</b>	10 Tests	18 <sup>th</sup> June
<b>Geography Test Series</b>	10 Tests	18 <sup>th</sup> June

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