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Daily MCQs: 08-09-2023

1. With reference to the National Payments Corporation of India (NPCI), consider the following statements.

1. NPCI has been incorporated as an umbrella organization for operating retail payments and settlement systems in India.
2. It is an initiative of SEBI.
3. NPCI has been incorporated as a "Not for Profit" Company under the Companies Act.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 1 and 3 only
- C. 2 and 3 only
- D. 1, 2 and 3

2. Consider the following statements about Dark Patterns.

1. It is a deceptive practice employed to influence user behaviour in a way that benefits the company implementing it.
2. A common dark pattern is the "sneak into basket" technique used on e-commerce websites.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

3. 'Uighurs' (or Uyghurs) are ethnic minorities associated with which of the following countries?

- A. Peru
- B. Yemen
- C. China
- D. Israel

4. Consider the following statements.

1. Iron deficiency is a common cause of too few healthy red blood cells in the body.
2. Zinc deficiency is characterized by growth retardation, loss of appetite, and impaired immune function.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

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5. Consider the following activities:

1. Forest canopy measurement
2. Oil and Gas Exploration
3. Management of Coastline
4. Modelling Pollution
5. Archeology and Building Construction

Which of the above activities can be successfully carried out by using LiDAR?

- A. 1, 2 and 3 only
- B. 2, 3 and 4 only
- C. 1, 2, 3 and 4 only
- D. 1, 2, 3, 4 and 5

Solutions:

1. Answer: **B**

Explanation:

- **Statement 1 is correct:** NPCI was incorporated in 2008 as an **umbrella organization for operating retail payments and settlement systems in India.**
- **Statement 2 is incorrect:** It is an initiative of the **RBI and Indian Banks' Association (IBA)** under the provisions of the **Payment and Settlement Systems Act, 2007**, for creating a robust Payment & Settlement Infrastructure in India.
- **Statement 3 is correct:** It has been incorporated as a **"Not for Profit" Company** under the **Companies Act 2013.**
- It has changed the way payments are made in India through a bouquet of retail payment products such as **RuPay card, Immediate Payment Service (IMPS), Unified Payments Interface (UPI), Bharat Interface for Money (BHIM), BHIM Aadhaar, National Electronic Toll Collection (NETC Fastag) and Bharat BillPay.**

2. Answer: **C**

Explanation:

- A dark pattern refers to a design or user interface technique that is intentionally crafted to manipulate or deceive users into making certain choices or taking specific actions that may not be in their best interest.
- **Statement 1 is correct:** It is a **deceptive practice employed to influence user behaviour in a way that benefits the company implementing it.**
- **Statement 2 is correct:** For example, a common dark pattern is the "sneak into basket" technique used on e-commerce websites.
- When a user adds an item to their shopping cart, a dark pattern may be employed by automatically adding additional items to the cart without the user's explicit consent or clear notification.
- This can mislead the user into purchasing more items than they intended, potentially increasing the company's sales but compromising the user's autonomy and decision-making.

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3. Answer: C

Explanation:

- The **Xinjiang province** in China's far west has had a long history of discord between the authorities and the indigenous ethnic Uighur population.
- Most Uighurs are **Muslim**, their language is related to **Turkish**, and they regard themselves as culturally and ethnically close to Central Asian nations.



- Some Uighurs living there refer to the region as **East Turkestan** and argue that it ought to be independent from China. There have been open calls for **separation of Xinjiang from China** since the 1990s. Since then, China suppressed any dissent from Uyghur and began placing restrictions on them.
- Ethnic tensions caused by economic and cultural factors are considered the root cause of the recent violence. There are complaints of severe restrictions on Islam, with fewer mosques and strict control over religious schools.

4. Answer: C

Explanation:

- **Zinc and iron deficiency** affects billions of people globally and the countries with this deficiency have diets composed mainly of rice, wheat, corn, and barley.
- **Statement 1 is correct:** Iron deficiency is a common cause of **too few healthy red blood cells in the body**.
- **Statement 2 is correct:** Zinc deficiency is characterized by **growth retardation, loss of appetite, and impaired immune function**.

5. Answer: D

Explanation:

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- LiDAR, which stands for **Light Detection and Ranging**, is a **remote sensing** method which uses **light in the form of a pulsed laser** to measure ranges (variable distances) to the Earth.
- These light pulses—combined with other data recorded by the airborne system— generate **precise, three-dimensional information about the shape of the Earth** and its **surface characteristics**.
- A lidar instrument principally consists of a laser, a scanner, and a specialized GPS receiver.
- Airplanes and helicopters are the most commonly used platforms for acquiring lidar data over broad areas.
- Two types of lidar are **topographic** and **bathymetric**.
 - Topographic lidar typically uses a near-infrared laser to map the land, while bathymetric lidar uses water-penetrating green light to also measure seafloor and riverbed elevations.

Applications

- Lidar systems allow scientists and mapping professionals to **examine both natural and manmade environments with accuracy, precision, and flexibility**.
- It is used in a wide range of land management and planning efforts, including hazard assessment (including lava flows, landslides, tsunamis, and floods), forestry, agriculture, geologic mapping, etc.

Forest canopy measurement

- LIDAR is widely used in the forest industry to plan and manage. It is used to measure vertical structure of forest canopy and also used to measure and understand canopy bulk density and canopy base height. Other uses of the LIDAR in the forest industry is the measurement of the peak height to estimate its root expansion.

Agriculture

- LiDAR can be used to **create 3D elevation maps of a particular land**. This can be converted to create slope and sunlight exposure area maps.
- This information can be used to identify the areas which require more water or fertilizer and help the farmers to save on their cost of labor, time and money.

River Survey

- Water penetrating green light of the LiDAR can be used to see things underwater and helps create a 3D model of the terrain. Underwater information of a river can help understand the depth, width, and flow of the water. It helps in monitoring the floodplains.

Modelling Pollution

- LiDAR wavelength is shorter. It operates in ultraviolet, visible region or near infrared. This helps to image the matter which is of the same size or larger than the wavelength.
- So LiDAR can detect pollutant particles of carbon dioxide, Sulphur dioxide, and methane. This information helps researchers to create a pollutant density map of the area which can be used for better planning of the city.

Archeology and Building Construction

- LiDAR plays an important role for the archeologist to understand the surface. LiDAR can detect micro-topography that is hidden by vegetation which helps archeologists to understand the surface.

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- Ground-based LiDAR technology can be used to capture the structure of the building. This digital information can be used for 3D mapping on the ground which can be used to create models of the structure. It is very useful for maintaining a record of the structure.

Management of Coastline

- LiDAR data of the coastline surface and under the water surface can be combined by researchers to analyze the waves behavior and area covered by them. If these data are captured periodically then marine scientists can understand the coastline erosion occurrence.

Urban Planning

- LiDAR data is a relatively new technology for obtaining Digital Surface Models (DSMs) of the earth's surface. This data, when combined with digital orthophotos, can be used to create highly detailed DSMs and eventually Digital City Models.
- Using special software it is also possible to create estimated surface models of buildings from the original LiDAR data. This technology allows large area models to be created in a very short space of time.

Oil and Gas Exploration

- Differential Absorption LiDAR (DIAL) can be used to detect trace amounts of gases in the atmosphere above hydrocarbon deposits. The detection of gases can be analysed for a measurable concentration of anomalies. This is a relatively new method of exploration that is being developed at the moment.
- Once a suitable site has been found LiDAR mapping comes into use, providing accurate models of the terrain in which the project is to be undertaken. The use of LiDAR in this way can help minimise the environmental impact as well as the overall cost by ensuring only the necessary area is developed.

