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## **GS** I

# 1. Satnamis: Dalit religious Community with a History of Protests

Source: IE, Page 11

Prelims: Guru Ghasidas, Bhakti Movement

Mains: Indian Culture - Salient aspects

**Context:** Recently, a violent conflict occurred between members of Satnamis Sect and Police personnel in Baloda Bazar in Chhattisgarh.

#### Early History of Satnamis

- Origin: The term "Satnam" (true name) popularized by 15th-century Bhakti poet Kabir.
- Founding: In 1657, Birbhan, inspired by Kabir, founded a Satnami community in Narnaul, Haryana.
- **Beliefs**: Rejected idolatry, caste distinctions, and superstition, promoting the worship of an immanent, formless Absolute.
- Occupation: Initially engaged in agriculture and trade; moved away from leatherwork over time.
- **Community**: Predominantly from "untouchable" castes, emphasizing equality and sympathy for the poor.

#### **Revolt against Aurangzeb**

- **Reason**: Revolt due to oppressive tax demands and local conflicts with Mughal authorities.
- **Conflict**: Rebels temporarily occupied Narnaul and Bairat before being crushed by Mughal forces.
- Resistance: Despite being poorly armed, Satnamis fought valiantly against the Mughal troops.
- **Outcome**: Thousands of Satnamis were killed, leading to a significant decline in their community.

#### **Revival under Guru Ghasidas**

- **Revival**: Community revived in Chhattisgarh under Guru Ghasidas in the mid-18th century.
- Teachings: Promoted worship of one true God, Satnam, and rejected image worship.
- **Practices**: Followers abstain from meat, alcohol, tobacco, and used brass utensils.
- Identity: Followers dropped caste names and adopted "Satnami" as their identity.
- Leadership: Established a lineage of gurus starting with his son, Balakdas, to lead the sect.

#### Present Status of Satnamis

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- Influence: Significant socio-political force, especially in Chhattisgarh.
- **Integration**: Many adopted caste-Hindu practices and rituals, integrating into the Hindu mainstream.
- **Demographics**: Comprise a substantial part of Chhattisgarh's SC population, asserting their political clout.





## **GS III**

## 2. Decoding a leak: How Google Search's Algorithms Work

Source: The Hindu, Page 11 Prelims: Application programming interface (API) Mains: Awareness in the fields of IT, Space, Computers

**Context:** Over 2,500 pages of API documentation with 14,014 attributes were leaked, likely originating from Google's internal Content API Warehouse.

#### The News about Data Leakage

- Leak Incident: On May 5, Rand Fishkin, CEO of SparkToro, received an anonymous email claiming access to Google's Search algorithm API documents.
- **Exposure**: The documents were publicly available from March 27 to May 7, revealing factors tracked by Google Search.
- **Verification**: Fishkin verified the documents with Erfan Azimi, a digital marketing agency founder, and shared them with SEO veteran Mike King.
- **Industry Impact**: The leak provided valuable insights for the SEO industry, debunking many of Google's claims.

#### What Google Lied About

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- **Domain Authority**: Google had stated that domain authority wasn't a focal point, but the leaked documents revealed a feature called "siteAuthority."
- **Click Data**: Contrary to Google's claims, click data is used for ranking, evidenced by features like NavBoost and Glue ranking systems.
- **Dwell Time**: Google previously denied using dwell time, but NavBoost considers long clicks, essentially measuring dwell time.
- **Chrome Data**: Google had denied using Chrome data for rankings, but the documents showed Chrome-related attributes affecting page quality scores and sitelinks generation.
- **Twiddlers**: Google uses re-ranking functions called "twiddlers," which are crucial for search rankings.

#### What are Real Factors Affecting Search Algorithms?

- **Site Authority**: The metric "siteAuthority" indicates the importance of domain authority in search rankings.
- **Click-Driven Boosts**: NavBoost and Glue systems use click data to adjust search rankings, including historical click data.





- **Dwell Time Measurement**: Long clicks or dwell time are considered in ranking algorithms, affecting the position of search results.
- **Chrome Data Utilization**: Page quality scores and sitelinks generation are influenced by data from the Chrome browser.
- Author's Reputation: Google tracks the author's name and uses comprehensive measurements of author entities and embeddings for ranking purposes.

## 3. Heatwaves as Disaster

#### Source: IE, Page 11

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Prelims: Notified Disasters, Disaster Management Act, 2005 Mains: Disaster and Disaster Management.

**Context:** The article discusses the ongoing debate about including heatwaves as a notified disaster under the Disaster Management (DM) Act, 2005, which would allow states to use disaster response funds for relief and management.

#### What are Notified Disasters?

- The DM Act defines a disaster as a "catastrophe, mishap, calamity or grave occurrence" arising from natural or man-made causes, resulting in significant loss of life, property destruction, or environmental damage.
- Disasters must be beyond the community's coping capacity.
- The National Disaster Response Fund (NDRF) is funded by the Centre, while the State Disaster Response Fund (SDRF) is contributed to by states (25% for most states, 10% for special category states).
- Funds from the NDRF and SDRF can only be used for managing notified disasters.
- Currently, 12 categories of disasters are notified under the DM Act: cyclones, drought, earthquakes, fires, floods, tsunamis, hailstorms, landslides, avalanches, cloudbursts, pest attacks, and frost and cold waves.

#### Why Heat Waves are Not Notified Disasters?

- At the time of the DM Act's enactment, heatwaves were considered common summer occurrences and not unusual weather events.
- In the past 15 years, the severity and frequency of heatwaves have increased, along with the number of people exposed due to increased economic activity.
- 23 states are now identified as vulnerable to heatwaves, prompting the creation of heat action plans (HAPs) to mitigate impacts.
- Despite the need, states currently cannot use SDRF funds for measures related to heatwaves, leading to demands for their inclusion under the DM Act.





#### **Centre Against This Inclusion - Reasons**

- Finance Commission's View:
  - The Finance Commission (FC) decides on financial resource distribution between the Centre and states.
  - States have requested the inclusion of heatwaves as notified disasters before the last three FCs, but the FCs have not agreed.
  - The 15th FC allowed states to use up to 10% of SDRF funds for "local disasters" such as heat waves but did not endorse their national notification.
  - Four states (Haryana, Uttar Pradesh, Odisha, and Kerala) have declared heatwaves as local disasters under this provision.

#### • Practical Difficulties:

- The Centre's unstated concern is the significant financial burden of notifying heatwaves as a disaster.
- The government would need to provide Rs 4 lakh as compensation for each death caused by a notified disaster, along with compensation for grievous injuries.
- Heatwaves claim many lives yearly, and accurately attributing deaths to heatwaves is challenging.
- With increasing heat wave-related deaths, mandatory compensation could strain disaster response funds.
- $\circ~$  The 15th FC allocated Rs 1,60,153 crore for SDRFs from 2021–26, but the inclusion of heatwaves could exhaust these funds.

## 4. How SpaceX's Starship could revolutionise space travel & exploration

#### Source: IE, Page 11

#### **Prelims: Starship Mission**

#### Mains: Awareness in the fields of IT, Space, Computers

**Context:** The article discusses the recent successful test flight of SpaceX's Starship, highlighting its significance in advancing reusable rocket technology for space travel.

#### What is Starship?

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- Starship is a two-stage heavy lift-off vehicle designed for carrying crew and cargo to Earth orbit, the Moon, Mars, and beyond.
- It stands nearly 120 meters tall, making it the largest rocket ever flown.
- The Super Heavy booster has 33 Raptor engines producing 74 mega-newtons of thrust, while the Starship spacecraft has six Raptor engines and four landing fins.
- Both the booster and the spacecraft are fully reusable, capable of re-entering Earth's atmosphere and landing back at the launch site.





How will it reduce the cost of space travel?

- **High Payload Capacity**: Can carry up to 150 tonnes to low-Earth orbit and at least 100 tonnes to the Moon and Mars.
- **Refuelling in Orbit**: Designed to be refuelled by other Starships in Earth orbit, similar to how airplanes refuel in the air.
- **Rapid Reusability**: Principal hardware elements are not discarded but are brought back for reuse, reducing costs.
- **Cost Efficiency**: Estimated to deliver 100 tonnes of cargo to Mars for \$50 million, compared to NASA's Space Shuttle, which cost \$1.5 billion for a quarter of that payload to low Earth orbit.

#### Benefits

- Heavy Payloads: Ability to carry larger and heavier equipment, enabling more ambitious missions.
- **Scientific Advancements**: Facilitates the launch of larger space telescopes and extensive equipment for Moon and Mars exploration.
- **Sample Return**: Capability to bring back large quantities of samples from space, aiding in scientific research.
- **Support for NASA's Artemis Program**: Integral to NASA's plans to return astronauts to the Moon by 2030.

#### Challenges

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- **Safety and Reliability**: Must prove to be safe and reliable while keeping costs low.
- **Historical Context**: Past reusable programs like NASA's Space Shuttle were more expensive than expendable rockets.
- **Development Pace**: Progress has been slower and more costly than initially envisioned by Elon Musk.
- Worker Safety: Reports of workplace injuries and safety concerns during rapid development, as documented by Reuters.





# Editorial, Ideas and Opinions

## 5. Tackling the fatty liver disease epidemic

Source: The Hindu, Page 9

The article discusses the increasing prevalence of non-alcoholic fatty liver disease and the importance of screening and early detection.

#### Current Scenario and Importance of Screening

- Theme: The theme for International Fatty Liver Day is 'Act Now, Screen Today'.
- **Changing Causes**: Liver diseases are now increasingly caused by non-alcoholic fatty liver disease rather than just alcohol use.
- **New Classification**: Fatty liver disease is now known as Metabolic dysfunction-associated steatotic liver disease (MASLD).
- **Global and Indian Prevalence**: Global prevalence of MASLD is 25–30%. In India, the prevalence among adults is 38.6% and among obese children, it is around 36%.

#### **Risk Factors and Impact**

- Link with Metabolic Syndrome: Strongly associated with obesity, diabetes, high blood pressure, and abnormal cholesterol levels.
- **Dietary Influence**: Excessive consumption of refined carbohydrates and sugars exacerbates metabolic problems leading to fatty liver.
- **Progression**: Can progress from simple fatty liver to steatohepatitis and cirrhosis, potentially requiring liver transplantation.

**Diagnosis and Management** 

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- **Early Detection**: Comprehensive health screenings, including physical exams, blood tests, and ultrasounds, are crucial.
- **Screening Methods**: Important tests include height, weight, BMI, abdominal girth, blood count, sugar profile, lipid profile, liver function tests, kidney tests, and abdominal ultrasounds.
- Advanced Testing: Liver fibrosis assessment using vibration-controlled transient elastography measures liver stiffness and monitors disease progression.
- **Personalized Approach**: Screening should be personalized based on risk factors like family history, lifestyle, and pre-existing conditions.
- **Integrated Strategies**: Combines dietary modifications, regular physical activity, and weight management to mitigate liver disease risks.





# In Brief

# 6. Red sanders logs worth ₹2 cr. seized in A.P., two arrested

#### Source: The Hindu, Page 3

**Context:** The Red Sanders Anti-Smuggling Task Force personnel seized 107 red sanders logs worth over ₹2 crore.

#### **Red Sanders**

- It is a flora species that are endemic to a distinct tract of forests in the Eastern Ghats region of Andhra Pradesh.
- Geographical conditions required: It usually grows in rocky, degraded and fallow lands with Red Soil and a hot and dry climate.
- Protection Status:
  - IUCN Red List: Endangered
  - CITES: Appendix II
  - Wildlife (Protection) Act 1972: Schedule IV
- Overharvesting and exploitation are other threats to red sanders. The features of the red sandalwood, like a deep red color and the ability to resist harsh temperature and humidity, make this wood unique and expensive.

## 7. Nepal seeks India's help to setup Jan Aushadhi Kendras

#### Source: The Hindu, Page 6

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**Context:** After Mauritius, Nepal has approached India to set up Jan Aushadhi Kendras in their country. **Jan Aushadhi Kendras** 

- With an objective of making quality generic medicines available at affordable prices to all, Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) was launched by the Department of Pharmaceuticals, Ministry of Chemicals & Fertilizers, Government of India in November, 2008.
- Under the scheme, dedicated outlets known as Janaushadhi Kendras are opened to provide generic medicines at affordable prices.
- As on 31.01.2024, 10607 Janaushadhi Kendras are functional across the country. Product basket of PMBJP comprises 1965 drugs and 293 surgical items.
- The Scheme is implemented by a society registered under the Societies Registration Act, viz., Pharma & Medical Bureau of India (PMBI) [erstwhile Bureau of Pharma PSUs of India (BPPI)].





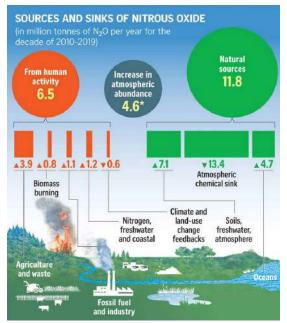
# 8. Study Ranks India second in nitrous oxide emissions

#### Source: The Hindu, Page 6

**Context:** India is the world's second largest source of nitrous oxide (N2O), a greenhouse gas that heats up the atmosphere far more than carbon dioxide.

#### Nitrous Oxide

- Nitrous oxide is an oxide of nitrogen with a chemical formula N2O. This organic compound is colourless and non-flammable at room temperature. It is also known as nitrous or laughing gas.
- Nitrous Oxide (N2O) is the third most significant greenhouse gas after carbon dioxide and methane and is 273 times more potent than CO2 over 100 years.
- Nearly 11% of such global man-made emissions in 2020 were from India, topped only by China at 16%.
- N2O emissions from human activities have increased by 40% (three million metric tonnes of N2O per year) in the past four decades, with growth rates between 2020 and 2022 higher than in any previous period since 1980.



## 9. World will amass 'major' oil surplus by '30: International Energy Agency

#### Source: The Hindu, Page 13

**Context:** The world is likely to have a major surplus of oil by 2030 as production is ramped up while clean energy transition tempers demand, the International Energy Agency said recently.

#### **International Energy Agency**

- The International Energy Agency is an International Energy Forum comprising various Industrialised Countries under the Organization For Economic Development And Cooperation (OECD).
- It consists of 31 member countries and eleven association countries.
- The IEA was established in 1974, in the wake of the 1973-1974 oil crisis, to help its members respond to major oil supply disruptions, a role it continues to fulfill today.

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- The IEA releases the India Energy Outlook Report.
- India joined this organization in 2017 as an Associate member.

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## 10. State deports 38 Myanmar nationals

#### Source: IE, Page 9

**Context:** The Manipur government Tuesday deported 38 Myanmar nationals through the Integrated Check Post (ICP) at Indo-Myanmar border town of Moreh.

#### Integrated Check Post (ICP)

• The ICPs are entry and exit points on India's land borders and house various facilities such as customs, immigration, border security, quarantine, among others, within a single facilitation zone.



- Formulated in the early 2000s in the aftermath of the Kargil War (1999) and initiated since 2012, the ICPs have helped streamline cross-border trade and passenger flows through the modernisation of border management infrastructure.
- In 2019-20, 40% of India's total trade with Bangladesh, Nepal, Myanmar, and Pakistan took place through the six ICPs at Agartala, Petrapole, Raxaul, Jogbani, Moreh and Attari.

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## **Daily Quiz**

1. Consider the following statements regarding Guru Ghasidas:

- 1. Guru Ghasidas was a prominent social reformer and spiritual leader in the Chhattisgarh region.
- 2. He founded the Satnami sect, which opposed caste discrimination and promoted equality.
- 3. The teachings of Guru Ghasidas had a significant influence on the Bhakti movement in North India.
- 4. He built the famous temple of Jaitkham in Girodhpuri, Chhattisgarh.

Which of the statements given above are correct?

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

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D. 1, 3, and 4 only

2. Which of the following statements best describes an Application Programming Interface (API)?

- A. An API is a hardware component used to enhance the processing speed of a computer system.
- B. An API is a set of protocols and tools that allows different software applications to communicate with each other.
- C. An API is a type of software application that manages and controls the hardware components of a computer system.
- D. An API is a database management system designed to store and retrieve large amounts of data efficiently.

3. How many of the following are officially notified disasters in India under the Disaster Management Act, 2005?

- 1. Earthquake
- 2. Tsunami
- 3. Industrial accidents
- 4. Cyber attacks

Select the correct option using the code given below:

- A. Only 1
- B. Only 2
- C. Only 3

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D. All of the above.

# 4. Which of the following statements about NASA's Artemis Program is correct?

- A. The Artemis Program aims to establish a permanent human presence on Mars by 2024.
- B. Artemis I will be the first crewed mission under the program, designed to land astronauts on the lunar surface.
- C. The Artemis Program includes plans to land the first woman and the next man on the Moon.
- D. The Artemis Program is a collaboration between NASA and the European Space Agency (ESA) to build a space station orbiting Earth.



## 5. Which of the following statements about fatty liver disease is correct?

- A. Fatty liver disease is exclusively caused by excessive alcohol consumption and is not associated with other factors.
- B. Non-alcoholic fatty liver disease (NAFLD) is closely linked with metabolic syndrome, which includes conditions such as obesity, diabetes, and hypertension.
- C. Fatty liver disease can be easily diagnosed through a simple blood test that measures liver enzymes.
- D. Fatty liver disease always progresses to cirrhosis if left untreated.

#### 6. Consider the following statements regarding Red Sanders (Pterocarpus santalinus):

- 1. Red Sanders is primarily found in the forests of the Western Ghats in India.
- 2. It is highly valued for its use in traditional medicine and its wood's distinct red hue.
- 3. The species is listed as Vulnerable on the IUCN Red List due to extensive illegal logging.
- 4. Red Sanders is protected under Schedule I of the Wildlife Protection Act, 1972.

How many of the statements given above are correct?

- A. Only 1
- B. Only 2
- C. Only 3
- D. All are correct

7. Which of the following statements about the Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) is correct?

- A. PMBJP aims to provide free healthcare services to all citizens below the poverty line in India.
- B. Under PMBJP, Jan Aushadhi Kendras are established to provide generic medicines at affordable prices.
- C. PMBJP focuses on setting up private hospitals and clinics across rural India to improve healthcare infrastructure.
- D. The scheme is exclusively funded and managed by state governments without any involvement of the central government.

# 8. Which of the following statements about nitrous oxide (N<sub>2</sub>O) emissions is correct?

- A. Nitrous oxide emissions are primarily produced by the combustion of fossil fuels in industrial processes.
- B. Agriculture is a significant source of nitrous oxide emissions, particularly due to the use of synthetic fertilizers.
- C. Nitrous oxide has a shorter atmospheric lifetime compared to methane (CH<sub>4</sub>) and carbon dioxide (CO<sub>2</sub>).
- D. Nitrous oxide emissions have a negligible impact on global warming compared to other greenhouse gases.

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9. Consider the following statements about the International Energy Agency (IEA):

- 1. The IEA was established as an within the autonomous agency framework of the Organisation for Economic **Co-operation** and Development (OECD).
- 2. The IEA primarily focuses on promoting renewable energy sources worldwide.
- 3. The IEA provides data and analysis on global energy markets, technologies, and policies.
- 4. The IEA member countries are required to have a minimum level of emergency oil stockpiles.

Which of the statements given above are correct?

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

10. Which of the following statements about Integrated Check Posts (ICPs) in India is correct?

- A. Integrated Check Posts (ICPs) are established solely for the purpose of immigration control and customs clearance.
- B. ICPs are developed by the Ministry of Home Affairs to enhance border security and facilitate trade and passenger movement across international borders.
- C. ICPs are exclusively located at India's land borders with Pakistan and Bangladesh to streamline bilateral trade.
- D. The management and operation of ICPs are handled by the Border Security Force (BSF) under the Ministry of Defence.

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### Solutions

#### Answer 1: B Explanation:

- Statement 1 is correct: Guru Ghasidas was indeed a prominent social reformer and spiritual leader in the Chhattisgarh region.
- Statement 2 is correct: He founded the Satnami sect, which opposed caste discrimination and promoted the idea of equality among all human beings.
- Statement 3 is incorrect: While Guru Ghasidas's teachings were significant, they were primarily influential in the Chhattisgarh region and among the Satnami community, rather than having a widespread impact on the Bhakti movement in North India.
- Statement 4 is correct: Guru Ghasidas built the famous temple of Jaitkham in Girodhpuri, Chhattisgarh, which is an important pilgrimage site for his followers.

Hence, Option B is correct.

#### Answer 2: B

#### **Explanation:**

• An API is indeed a set of protocols, routines, and tools that allows different software applications to communicate with each other. It defines methods and data structures for such interactions.

Hence, Option B is correct.

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#### Answer 3: C

#### Explanation:

• Statement 1 is correct: Earthquakes are officially notified disasters in India, given their potential to cause widespread destruction and loss of life.

- Statement 2 is correct: Tsunamis are also notified as disasters due to their catastrophic impact on coastal regions.
- Statement 3 is correct: Industrial accidents, such as chemical spills and explosions, are included in the list of notified disasters because of their severe implications for public health and safety.
- Statement 4 is incorrect: Cyber attacks, while increasingly significant in terms of national security and economic impact, are not yet classified as notified disasters under the Disaster Management Act, 2005.

Hence, option C is correct.

#### Answer 4: C

#### Explanation:

- The Artemis program is a significant undertaking by NASA, aiming to return humans to the Moon for the first time since the Apollo missions in the 1970s.
- One of the key goals of the Artemis Program is to land the first woman and the next man on the Moon, specifically at the lunar South Pole.

Hence, Option C is correct.

#### Answer 5: B

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#### **Explanation**:

 Non-alcoholic fatty liver disease (NAFLD) is indeed closely linked with metabolic syndrome, which includes a group of conditions such as obesity, insulin resistance, diabetes, and hypertension. NAFLD is becoming increasingly common due to the rising prevalence of these conditions.





Hence, Option B is correct.

#### Answer 6: B Explanation:

- Statement 1 is correct: Red Sanders is primarily found in the forests of the Eastern Ghats, particularly in Andhra Pradesh, India.
- Statement 2 is correct: It is highly valued for its use in traditional medicine and for its wood, which has a distinct red hue.
- Statement 3 is incorrect: Red Sanders (Red Sandalwood) has fallen back into the 'endangered' category in the International Union for Conservation of Nature's (IUCN) Red List.
- Statement 4 is incorrect: Red Sanders was recently enlisted under Schedule IV through amendment to the Act in December 2022.

Hence, Option B is correct.

#### Answer 7: C

#### **Explanation**:

• Under PMBJP, Jan Aushadhi Kendras are established to provide generic medicines at affordable prices. This helps in reducing the healthcare expenditure for the common people.

Hence, Option C is correct.

#### Answer 8: B

**Explanation:** 

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- Nitrous oxide (N<sub>2</sub>O) is a potent greenhouse gas with significant environmental impacts.
- Agriculture is a significant source of nitrous oxide emissions, mainly due to the use of synthetic fertilizers. The application of nitrogen-based fertilizers leads to soil microbial processes that produce N<sub>2</sub>O.

Hence, Option B is correct.

#### Answer 9: B Explanation:

- Statement 1 is correct: The IEA was established in 1974 as an autonomous agency within the framework of the OECD to help coordinate responses to major energy disruptions.
- Statement 2 is incorrect: While the IEA does promote energy security and efficiency, it is not exclusively focused on renewable energy sources; it covers all aspects of energy, including fossil fuels.
- Statement 3 is correct: The IEA provides comprehensive data, analysis, and policy advice on global energy markets, technologies, and policies.
- Statement 4 is correct: IEA member countries are indeed required to maintain a minimum level of emergency oil stockpiles to ensure energy security in times of crisis.

Hence, Option B is correct.

#### Answer 10: B

#### **Explanation:**

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• ICPs are developed by the Ministry of Home Affairs to enhance border security and facilitate trade and passenger movement across international borders. They are designed to integrate various border management services in a single location.

Hence, Option B is correct.



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