



Daily PIB Summary

23 July, 2026

Welcome to PadhAI

Your Partner in Smart UPSC Preparation

You're holding a resource designed to cut through the noise and bring you *only what truly matters* for the exam. At PadhAI, we believe preparation should be clear, focused, and time-efficient — never overwhelming.

At PadhAI, we build everything around one philosophy:

"Learn only what matters.

Learn it the right way.

Learn it at the right time."

With a rapidly growing community of **2lakh+ aspirants**, PadhAI has become a trusted space for disciplined learning and daily practice.

We bring you:

- Concise Monthly Magazines
- Daily PIB Summaries @ 9 PM
- Daily MCQs + Mains Practice
- High-yield, exam-ready content
- APP features - duel competition, fast mains answer review, daily news article summary, PYQs, MCQs PRACTICE, AI tutor (based on highly yield content From UPSC topper insight, and various trusted websites). Many more feature which will improve your preparation and save your time automatically.

Join our Telegram community and download the PadhAI App to experience structured guidance, supportive peers, and consistent motivation — everything a serious aspirant needs

Welcome to a smarter way of preparing.

Welcome to PadhAI.



[Click here](#) to join to telegram channel

Scan the QR code or just click on it
to download the app

1. PARLIAMENT QUESTION: RESEARCH, DEVELOPMENT AND INNOVATION (RDI) FUND UNDER ANRF



- I. The **RDI Fund** has been created under the **Anusandhan National Research Foundation (ANRF)** to support:
 - A. Scientific research.
 - B. Technological innovation.
 - C. Product development.
 - D. Commercialization of research outcomes.
- II. It seeks to:
 - A. Increase private sector participation in R&D.
 - B. Promote collaboration between academia, research institutions, startups, and industry.
 - C. Support strategic and emerging technologies.
- III. Priority sectors include:
 - A. Artificial Intelligence (AI).
 - B. Quantum Technology.
 - C. Biotechnology.
 - D. Semiconductors.
 - E. Clean Energy.
 - F. Space Technology.
 - G. Advanced Materials.

- IV. The initiative aims to improve India's global competitiveness in science and innovation.

BACKGROUND / CONTEXT

Anusandhan National Research Foundation (ANRF)

- Established through the **Anusandhan National Research Foundation Act, 2023**.
- Replaced the **Science and Engineering Research Board (SERB)**.
- Functions under the **Department of Science and Technology (DST)**, Ministry of Science and Technology.
- Serves as the apex body for promoting research and innovation across disciplines.

Objectives of ANRF

- Foster a culture of research and innovation.
- Support high-quality scientific research.
- Strengthen academia–industry partnerships.
- Promote interdisciplinary research.
- Enhance India's innovation ecosystem.

OBJECTIVES OF THE RDI FUND

- Finance translational and applied research.
- Encourage industry-led innovation.
- Bridge the gap between laboratory research and commercialization.
- Support startups and deep-tech innovation.
- Build research infrastructure.
- Promote private investment in R&D.

SIGNIFICANCE

Scientific Significance

- Encourages cutting-edge research.
- Supports frontier technologies.

Economic Significance

- Promotes innovation-led economic growth.
- Generates high-skilled employment.
- Improves industrial competitiveness.

Strategic Significance

- Strengthens technological self-reliance.



- Supports **Aatmanirbhar Bharat**.
- Enhances India's position in global innovation rankings.

KEY HIGHLIGHTS

- **Fund:** Research, Development and Innovation (RDI) Fund.
- **Institution:** Anusandhan National Research Foundation (ANRF).
- **Parent Ministry:** Ministry of Science and Technology.
- **Implementing Department:** Department of Science and Technology (DST).
- **Focus:** Research, innovation, commercialization, and industry-academia collaboration.
- **Priority Areas:** AI, Quantum Technology, Biotechnology, Semiconductors, Clean Energy, Space, Advanced Manufacturing.
- **Challenges:** Low private R&D investment, limited commercialization, fragmented research ecosystem, and shortage of industry-academia collaboration.
- **Way Forward:** Increase public-private partnerships, strengthen technology transfer offices, improve intellectual property support, encourage venture funding for deep-tech startups, and expand global research collaborations.

PRELIMS BOOSTER BOX

- **ANRF: Anusandhan National Research Foundation.**
- **Legal Basis: Anusandhan National Research Foundation Act, 2023.**
- **Replaced: Science and Engineering Research Board (SERB).**
- **Administrative Department: Department of Science and Technology (DST).**
- **Parent Ministry: Ministry of Science and Technology.**

- **Objective:** Promote research, innovation, and industry-academia collaboration across all disciplines.
- **RDI Fund:** Supports research, development, innovation, and commercialization of technologies.
- **National Education Policy (NEP), 2020:** Recommended establishing the **National Research Foundation (NRF)**, which was later operationalized as the **ANRF**.
- **Gross Expenditure on R&D (GERD):** Indicator measuring total national expenditure on research and development.
- **Deep Technology (Deep Tech):** Innovations based on substantial scientific or engineering advances, such as AI, quantum computing, semiconductors, and biotechnology.

PadhAI-GENERATED UPSC MCQ

Consider the following statements:

1. The **Anusandhan National Research Foundation (ANRF)** was established through an Act of Parliament in **2023**.
2. The **ANRF** replaced the **Science and Engineering Research Board (SERB)**.
3. The **Research, Development and Innovation (RDI) Fund** seeks to promote industry-academia collaboration and commercialization of research.

Which of the statements given above is/are correct?

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

Answer: (d)

2. GOVERNMENT HIGHLIGHTS SAFETY, PERFORMANCE AND NATIONAL BENEFITS OF ETHANOL-BLENDED PETROL



- I. **Ethanol-Blended Petrol (EBP)** involves mixing ethanol with petrol to reduce dependence on fossil fuels.
- II. The Government has stated that ethanol-blended petrol:
 - A. Is **safe for compatible vehicles**.
 - B. Does **not adversely affect engine performance** when used as per manufacturer specifications.
 - C. Reduces vehicular emissions.
 - D. Improves energy security.
 - E. Generates additional income for farmers.
- III. India has already achieved the target of **20% ethanol blending (E20)** ahead of schedule in several regions and is expanding infrastructure to support nationwide adoption.
- IV. Ethanol is produced primarily from:
 - A. Sugarcane juice.

- B. Sugar syrup.
- C. B-heavy molasses.
- D. C-heavy molasses.
- E. Food grains such as maize and surplus rice (as permitted by Government policy).

BACKGROUND / CONTEXT

Ethanol Blended Petrol (EBP) Programme

- I. **Launched: 2003.**
- II. **Nodal Ministry:** Ministry of Petroleum and Natural Gas.
- III. Implemented in coordination with:
 - A. Ministry of Consumer Affairs, Food & Public Distribution.
 - B. Ministry of Agriculture & Farmers Welfare.
 - C. Ministry of New and Renewable Energy.

Objectives

- Reduce crude oil imports.
- Improve energy security.
- Lower greenhouse gas emissions.
- Increase farmers' income.
- Promote biofuel production.

NATIONAL POLICY ON BIOFUELS, 2018 (AMENDED 2022)

Key Features

- I. Promotes:
 - A. First Generation (1G) Biofuels.
 - B. Second Generation (2G) Biofuels.
 - C. Advanced Biofuels.
- II. Expands the range of feedstocks for ethanol production.
- III. Supports the target of **20% ethanol blending (E20)**.
- IV. Encourages the establishment of advanced bio-refineries.

BENEFITS OF ETHANOL-BLENDED PETROL

Environmental

- Lower carbon monoxide emissions.
- Reduced particulate emissions.
- Cleaner combustion.
- Supports India's climate commitments.

Economic

- Reduces import bill for crude oil.
- Enhances energy security.
- Creates rural employment.
- Increases demand for agricultural produce.

Agricultural

- Additional income for sugarcane and maize farmers.
- Diversification of agricultural markets.

Automobile

- Modern vehicles designed for E20-compatible fuel can operate safely and efficiently with recommended ethanol blends.

KEY HIGHLIGHTS

- **Programme:** Ethanol Blended Petrol (EBP).
- **Launch:** 2003.
- **Target Blend:** 20% ethanol (E20).
- **Lead Ministry:** Ministry of Petroleum and Natural Gas.
- **Policy Framework:** National Policy on Biofuels, 2018 (amended in 2022).
- **Strategic Significance:** Energy security, reduced import dependence, and cleaner transport fuels.
- **Challenges:** Feedstock availability, storage and transport infrastructure, seasonal supply fluctuations, and gradual transition to E20-compatible vehicles.
- **Way Forward:** Expand ethanol production capacity, promote second-generation biofuels, strengthen logistics, encourage flex-fuel vehicles, and enhance farmer participation.

PRELIMS BOOSTER BOX

- **Ethanol:** Renewable biofuel produced by fermenting sugar- and starch-rich feedstocks.
- **EBP Programme:** Launched in **2003** to blend ethanol with petrol.
- **E20 Fuel:** Petrol containing **20% ethanol** and **80% petrol**.
- **National Policy on Biofuels:** Introduced in **2018** and amended in **2022**.
- **1G Biofuels:** Produced from food crops such as sugarcane, maize, and food grains.
- **2G Biofuels:** Produced from agricultural residues, crop waste, bamboo, and lignocellulosic biomass.
- **Flex-Fuel Vehicle (FFV):** Vehicle capable of operating on varying blends of petrol and ethanol.
- **SATAT Initiative: Sustainable Alternative Towards Affordable Transportation**—promotes **Compressed Biogas (CBG)** production from biomass and waste.
- **Energy Security:** Ensuring uninterrupted availability of energy at affordable prices.
- **Net Zero Target:** India aims to achieve **net-zero greenhouse gas emissions by 2070**.

PadhAI-GENERATED UPSC MCQ

Consider the following statements regarding the Ethanol Blended Petrol (EBP) Programme:

1. The **EBP Programme** was launched in **2003**.
2. The **National Policy on Biofuels** was introduced in **2018** and amended in **2022**.
3. **Second Generation (2G) biofuels** are produced primarily from agricultural residues and lignocellulosic biomass.

Which of the statements given above is/are correct?

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

Answer: (d)

3. MEASURES TAKEN TO TACKLE CYBER FRAUDS



BACKGROUND / CONTEXT

Cyber Fraud

Cyber fraud refers to financial or identity-related crimes committed using computers, mobile devices, communication networks, or the internet.

Common forms include:

- UPI fraud.
- Phishing.
- QR code scams.
- Investment scams.
- OTP fraud.
- Identity theft.
- Sextortion.
- Digital arrest scams.
- Malware and ransomware attacks.

MAJOR GOVERNMENT MEASURES

Indian Cyber Crime Coordination Centre (I4C)

- I. **Established:** 2018.
- II. **Ministry:** Ministry of Home Affairs.
- III. **Functions:**
 - A. National coordination.
 - B. Capacity building.
 - C. Cybercrime investigation support.
 - D. Cyber forensics.

National Cyber Crime Reporting Portal

- I. Official portal:
<https://cybercrime.gov.in>
- II. Enables citizens to report:
 - A. Financial fraud.
 - B. Cyber harassment.
 - C. Crimes against women and children.

National Helpline – 1930

- Dedicated helpline for reporting **online financial frauds**.
- Enables immediate coordination with banks to freeze fraudulent transactions.

- I. With the rapid growth of digital payments, e-commerce, and online banking, cyber frauds have increased significantly.
- II. The Government has adopted a **multi-pronged strategy** involving:
 - A. Prevention.
 - B. Detection.
 - C. Investigation.
 - D. Public awareness.
 - E. Capacity building.
- III. Key initiatives include:
 - A. **Indian Cyber Crime Coordination Centre (I4C).**
 - B. **National Cyber Crime Reporting Portal.**
 - C. **Citizen Financial Cyber Fraud Reporting and Management System (CFCFRMS).**
 - D. **National Cyber Crime Helpline – 1930.**
 - E. **Cyber Swachhta Kendra.**
 - F. **CERT-In advisories and incident response.**
- IV. Banks, telecom service providers, payment service providers, and law enforcement agencies work together to quickly detect and prevent fraudulent transactions.

Citizen Financial Cyber Fraud Reporting and Management System (CFCFRMS)

- I. Facilitates real-time reporting of financial cyber fraud.
- II. Coordinates with:
 - A. Banks.
 - B. Financial institutions.
 - C. Payment service providers.
 - D. Law enforcement agencies.

CERT-In

- I. **Indian Computer Emergency Response Team.**
- II. Functions under:
Ministry of Electronics and Information Technology (MeitY).
- III. Responsible for:
 - A. Cyber incident response.
 - B. Threat advisories.
 - C. Vulnerability management.
 - D. Cyber security coordination.

Cyber Swachhta Kendra

- Botnet Cleaning and Malware Analysis Centre.
- Provides free tools for malware detection and removal.

LEGAL FRAMEWORK

Information Technology Act, 2000

Provides legal provisions relating to:

- Hacking.
- Identity theft.
- Data protection-related offences.
- Electronic records.
- Cyber offences.

Bharatiya Nyaya Sanhita (BNS), 2023

Contains provisions relating to:

- Cheating.
- Forgery.
- Identity-related offences.
- Technology-enabled crimes.

KEY HIGHLIGHTS

- **Lead Ministry:** Ministry of Home Affairs.
- **Nodal Agency:** Indian Cyber Crime Coordination Centre (I4C).
- **Cyber Emergency Response:** CERT-In.
- **Reporting Portal:** National Cyber Crime Reporting Portal.
- **Emergency Helpline:** 1930.
- **Strategic Importance:** Protects India's digital economy and enhances public trust in digital payments.
- **Challenges:** Cross-border cybercrime, evolving fraud techniques, low cyber awareness, cryptocurrency misuse, and shortage of skilled investigators.
- **Way Forward:** Strengthen AI-based fraud detection, improve cyber literacy, expand digital forensic capabilities, enhance international cooperation, and encourage adoption of cyber hygiene practices.

PRELIMS BOOSTER BOX

- **I4C: Indian Cyber Crime Coordination Centre**, established in **2018** under the **Ministry of Home Affairs**.
- **Cyber Crime Helpline: 1930.**
- **CERT-In: Indian Computer Emergency Response Team**, functioning under **MeitY**.
- **Cyber Swachhta Kendra:** National Botnet Cleaning and Malware Analysis Centre.
- **Information Technology Act, 2000:** India's primary cyber law.
- **National Critical Information Infrastructure Protection Centre (NCIIPC):** Functions under the **National Technical Research Organisation (NTRO)** to protect critical information infrastructure.
- **Phishing:** Fraudulent attempt to obtain confidential information by impersonating a trusted entity.



- **Digital Arrest Scam:** Fraudsters impersonate law enforcement officials and coerce victims into transferring money.
- **Cyber Hygiene:** Safe online practices such as strong passwords, multi-factor authentication, regular software updates, and avoiding suspicious links.

PadhAI-GENERATED UPSC MCQ

Consider the following statements:

1. The **Indian Cyber Crime Coordination Centre (I4C)** functions under the **Ministry of Home Affairs**.
2. **CERT-In** functions under the **Ministry of Electronics and Information Technology (MeitY)**.
3. The **National Cyber Crime Helpline 1930** is used for reporting online financial frauds.

Which of the statements given above is/are correct?

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

Answer: (d)

4. PROMOTING INDIAN CULTURE ABROAD



- I. India promotes its cultural heritage globally through:
 - A. Cultural exchange programmes.
 - B. International festivals.

- C. Yoga and Ayurveda promotion.
- D. Scholarships.
- E. Academic collaborations.
- F. Restoration of cultural heritage.
- G. Promotion of Indian languages, arts, music, dance, and literature.

- II. The **Indian Council for Cultural Relations (ICCR)** is the principal organization responsible for implementing India's cultural diplomacy.
- III. Indian Missions and Cultural Centres abroad organize:
 - A. Cultural festivals.
 - B. Exhibitions.
 - C. Dance and music performances.
 - D. Hindi and Sanskrit classes.
 - E. Celebrations of Indian festivals.
- IV. Global observance of the **International Day of Yoga (21 June)** has significantly enhanced India's cultural outreach.

BACKGROUND / CONTEXT

Cultural Diplomacy

Cultural diplomacy refers to the use of a country's culture, traditions, values, arts, and heritage to strengthen international relations and foster mutual understanding.

India's cultural diplomacy is based on:

- Ancient civilization.
- Democratic values.
- Diversity.
- Shared heritage.
- Soft power.

MAJOR INSTITUTIONS

Indian Council for Cultural Relations (ICCR)

- I. **Established: 1950.**
- II. **Founder: Maulana Abul Kalam Azad.**
- III. **Administrative Ministry:** Ministry of External Affairs.
- IV. Functions:
 - A. Cultural exchange programmes.

- B. Scholarships for foreign students.
- C. Cultural festivals.
- D. Establishment of Indian Cultural Centres abroad.

Ministry of Culture

Supports:

- Cultural preservation.
- International cultural cooperation.
- Museums.
- Performing arts.
- Heritage conservation.

MAJOR INITIATIVES

International Day of Yoga

- Celebrated annually on **21 June**.
- Declared by the **United Nations General Assembly (UNGA)** in **2014** following India's proposal.

Festival of India

- I. Organized in various countries.
- II. Showcases:
 - A. Indian dance.
 - B. Music.
 - C. Cuisine.
 - D. Crafts.
 - E. Literature.

Scholarship Programmes

ICCR offers scholarships for international students to pursue higher education in India.

Buddhist and Civilizational Diplomacy

Promotion of:

- Buddhist heritage.
- Nalanda legacy.
- Shared cultural links with Southeast Asia and other regions.

SIGNIFICANCE

Diplomatic

- Strengthens bilateral relations.

- Enhances people-to-people contacts.

Economic

- Promotes tourism.
- Supports creative industries.
- Encourages investment.

Strategic

- Enhances India's global image.
- Expands India's soft power.
- Strengthens diaspora engagement.

KEY HIGHLIGHTS

- I. **Lead Ministry:** Ministry of External Affairs.
- II. **Key Institution:** Indian Council for Cultural Relations (ICCR).
- III. **Objectives:**
 - A. Promote Indian culture globally.
 - B. Strengthen cultural diplomacy.
 - C. Foster international goodwill.
 - D. Enhance India's soft power.
- IV. **Major Tools:** Yoga, Ayurveda, classical arts, festivals, scholarships, cultural centres, and heritage diplomacy.
- V. **Challenges:** Competition in global cultural outreach, limited resources, digital engagement gaps, and preservation of intangible heritage.
- VI. **Way Forward:** Expand Indian Cultural Centres, strengthen digital cultural diplomacy, promote Indian languages internationally, deepen collaborations with UNESCO, and leverage the Indian diaspora for cultural outreach.

PRELIMS BOOSTER BOX

- **ICCR: Indian Council for Cultural Relations.**
- **Established: 1950.**
- **Founder: Maulana Abul Kalam Azad.**
- **Administrative Ministry: Ministry of External Affairs.**
- **International Day of Yoga:** Celebrated on **21 June**; adopted by the **United Nations General Assembly (UNGA)** in **2014**.

- **Soft Power:** The ability of a country to influence others through culture, values, and diplomacy rather than military or economic coercion.
- **UNESCO Intangible Cultural Heritage:** Includes traditions, performing arts, rituals, festivals, and traditional knowledge recognized for their cultural significance.
- **Vasudhaiva Kutumbakam:** Sanskrit phrase meaning "The World is One Family."
- **Festival of India:** Cultural festivals organized abroad to showcase India's art, culture, cuisine, crafts, and heritage.
- **Project Mausam:** Initiative to revive and strengthen India's ancient maritime cultural links across the Indian Ocean Region.

PadhAI-GENERATED UPSC MCQ

Consider the following statements:

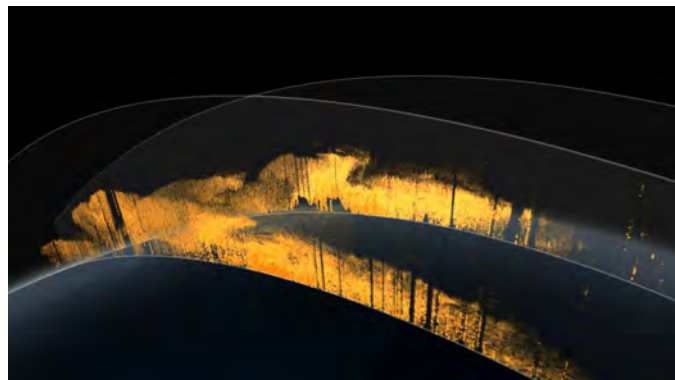
1. The **Indian Council for Cultural Relations (ICCR)** was established in **1950** under the **Ministry of External Affairs**.
2. **Maulana Abul Kalam Azad** was the founder of the ICCR.
3. The **International Day of Yoga** is observed every year on **21 June**.

Which of the statements given above is/are correct?

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

Answer: (d)

5. UNRAVELING GLOBAL AEROSOL DIVERSITY PROVIDES THE KEY TO DECODING CLIMATE CHANGE



- I. **Aerosols** are tiny solid or liquid particles suspended in the atmosphere.
- II. They originate from both:
 - A. **Natural sources** – dust storms, sea salt, volcanic eruptions, wildfires, pollen.
 - B. **Human activities** – fossil fuel combustion, industrial emissions, biomass burning, and vehicular pollution.
- III. Different aerosol types have distinct effects on climate:
 - A. Some **reflect sunlight**, producing a cooling effect.
 - B. Others **absorb heat**, contributing to atmospheric warming.
- IV. Understanding aerosol diversity helps improve:
 - A. Climate projections.
 - B. Weather forecasting.
 - C. Air quality assessments.
 - D. Climate adaptation strategies.

BACKGROUND / CONTEXT

What are Aerosols?

Aerosols are microscopic particles or droplets suspended in the atmosphere.

Natural Aerosols

- Desert dust.



- Sea salt.
- Volcanic ash.
- Forest fire smoke.
- Biological particles (pollen, spores).

Anthropogenic Aerosols

- Sulphate particles.
- Black carbon (soot).
- Organic carbon.
- Industrial emissions.
- Vehicular emissions.

ROLE OF AEROSOLS IN CLIMATE

Direct Effect

- Scatter or absorb incoming solar radiation.
- **Sulphate aerosols** generally cool the Earth by reflecting sunlight.
- **Black carbon** absorbs solar radiation, causing atmospheric warming.

Indirect Effect

- I. Act as **Cloud Condensation Nuclei (CCN)**.
- II. Influence:
 - A. Cloud formation.
 - B. Cloud brightness.
 - C. Cloud lifetime.
 - D. Rainfall patterns.

Surface and Atmospheric Effects

- Modify regional monsoon circulation.
- Influence glacier melting through black carbon deposition.
- Affect visibility and air quality.

IMPORTANCE OF STUDYING GLOBAL

AEROSOL DIVERSITY

- Reduces uncertainties in climate models.
- Improves prediction of extreme weather events.
- Enhances understanding of regional climate variability.
- Supports formulation of climate mitigation policies.

- Helps distinguish between natural and human-induced climate impacts.

KEY HIGHLIGHTS

- **Subject:** Atmospheric aerosols and climate change.
- **Scientific Importance:** Improves climate model accuracy.
- **Environmental Importance:** Better understanding of radiative forcing and cloud processes.
- **Policy Importance:** Supports evidence-based climate adaptation and pollution control.
- **Challenges:** Complex aerosol chemistry, varying lifetimes, diverse sources, and limited observations over oceans and remote regions.
- **Way Forward:** Expand satellite observations, strengthen ground-based monitoring networks, integrate aerosol diversity into climate models, and reduce anthropogenic emissions through cleaner technologies.

PRELIMS BOOSTER BOX

- **Aerosols:** Tiny solid or liquid particles suspended in the atmosphere.
- **Natural Sources:** Dust, sea salt, volcanic ash, wildfire smoke, pollen.
- **Anthropogenic Sources:** Industrial emissions, vehicle exhaust, biomass burning, fossil fuel combustion.
- **Black Carbon:** Strong sunlight-absorbing aerosol that contributes to atmospheric warming and glacier melting.
- **Sulphate Aerosols:** Primarily reflect solar radiation, producing a cooling effect.
- **Cloud Condensation Nuclei (CCN):** Aerosol particles on which water vapour condenses to form cloud droplets.
- **Radiative Forcing:** Change in Earth's energy balance caused by factors such as greenhouse gases or aerosols.



- **Aerosol Optical Depth (AOD):** Measure of the amount of aerosol present in a vertical column of the atmosphere.
- **IPCC: Intergovernmental Panel on Climate Change**, established by the **World Meteorological Organization (WMO)** and the **United Nations Environment Programme (UNEP)** in 1988.
- **National Clean Air Programme (NCAP):** India's flagship programme to reduce particulate air pollution in cities.

PadhAI-GENERATED UPSC MCQ

Consider the following statements regarding atmospheric aerosols:

1. Aerosols may originate from both natural processes and human activities.
2. Black carbon generally absorbs solar radiation and contributes to atmospheric warming.
3. Aerosols can act as **Cloud Condensation Nuclei (CCN)** and influence cloud formation.

Which of the statements given above is/are correct?

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

Answer: (d)