



Daily PIB Summary

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1. DOMESTIC PHARMACEUTICAL MANUFACTURERS



- I. India is one of the world's largest pharmaceutical producers, particularly in **generic medicines** and **vaccines**.
- II. The Government is supporting domestic manufacturers through:
 - A. Production Linked Incentive (PLI) Schemes.
 - B. Promotion of Bulk Drug Parks.
 - C. Medical Devices Parks.
 - D. Ease of doing business reforms.
 - E. Strengthening quality standards and regulatory systems.
- III. These initiatives contribute to **Atmanirbhar Bharat** and improved healthcare security.

BACKGROUND / CONTEXT

Indian Pharmaceutical Industry

India is globally recognized as:

- The **largest supplier of generic medicines** by volume.
- A leading manufacturer of vaccines.
- A major exporter of Active Pharmaceutical Ingredients (APIs), formulations, and biotechnology products.

Major Products

- Generic medicines.
- Vaccines.
- Biosimilars.

- Active Pharmaceutical Ingredients (APIs).
- Medical devices.
- Nutraceuticals.

GOVERNMENT INITIATIVES

Production Linked Incentive (PLI) Scheme for Pharmaceuticals

Objective

- I. Promote domestic manufacturing of:
 - A. High-value pharmaceutical products.
 - B. Complex generic drugs.
 - C. Biopharmaceuticals.
 - D. Novel medicines.

Benefits

- Incentives based on incremental sales.
- Encourages investment.
- Improves global competitiveness.

PLI Scheme for Bulk Drugs

Promotes domestic manufacturing of:

- Critical Active Pharmaceutical Ingredients (APIs).
- Key Starting Materials (KSMs).
- Drug Intermediates.

Objective

- Reduce dependence on imports for essential pharmaceutical raw materials.

Promotion of Bulk Drug Parks

Supports creation of:

- Common infrastructure.
- Testing facilities.
- Utilities.
- Waste management systems.

Benefits include:

- Lower production costs.
- Improved economies of scale.
- Enhanced competitiveness.

Medical Devices Parks

Encourages domestic manufacturing of:



- Diagnostic equipment.
- Medical instruments.
- Implants.
- Consumables.

REGULATORY FRAMEWORK

Central Drugs Standard Control Organization (CDSCO)

Functions under the **Ministry of Health and Family Welfare**.

Responsible for:

- Drug approvals.
- Clinical trials.
- Drug quality regulation.
- Import regulation.
- Medical device regulation.

Drugs and Cosmetics Act, 1940

Provides for:

- Regulation of manufacture.
- Distribution.
- Sale of drugs and cosmetics.
- Quality standards.

ROLE OF THE DEPARTMENT OF PHARMACEUTICALS

The **Department of Pharmaceuticals** functions under the:

- **Ministry of Chemicals and Fertilizers**

Key responsibilities include:

- Pharmaceutical policy.
- Promotion of domestic manufacturing.
- Pricing policies.
- PLI implementation.
- Public sector pharmaceutical enterprises.

SIGNIFICANCE

Healthcare

- Ensures affordable medicines.
- Improves medicine availability.
- Strengthens healthcare security.

Economic

- Promotes manufacturing.
- Generates employment.
- Increases exports.

Strategic

- Reduces dependence on imported APIs.
- Enhances supply chain resilience.

Innovation

- Encourages research and development.
- Supports biotechnology and advanced pharmaceuticals.

CHALLENGES

- Dependence on imported APIs for some medicines.
- Compliance with evolving global quality standards.
- Rising research and development costs.
- Increasing international competition.
- Environmental compliance in pharmaceutical manufacturing.

WAY FORWARD

- Expand domestic API production.
- Increase investment in pharmaceutical R&D.
- Promote innovation through academia-industry collaboration.
- Strengthen quality assurance and regulatory capacity.
- Improve export competitiveness through international harmonisation.

KEY HIGHLIGHTS

- **Nodal Department:** Department of Pharmaceuticals.
- **Parent Ministry:** Ministry of Chemicals and Fertilizers.
- **Major Schemes:** PLI for Pharmaceuticals, PLI for Bulk Drugs, Bulk Drug Parks Scheme, Medical Devices Parks Scheme.



- **Regulator:** Central Drugs Standard Control Organization (CDSCO).
- **Major Law:** Drugs and Cosmetics Act, 1940.
- **Strategic Importance:** Supports self-reliance, healthcare security, and India's position as the "Pharmacy of the World."
- **Challenges:** API import dependence, quality standards, and innovation capacity.

PRELIMS BOOSTER BOX

- **Department of Pharmaceuticals:** Functions under the **Ministry of Chemicals and Fertilizers**.
- **CDSCO: Central Drugs Standard Control Organization**, India's national drug regulatory authority.
- **Drugs and Cosmetics Act, 1940:** Principal legislation regulating drugs and cosmetics in India.
- **API: Active Pharmaceutical Ingredient**, the biologically active component of a medicine.
- **KSM: Key Starting Material**, an important raw material used in manufacturing APIs.
- **PLI Scheme:** Production Linked Incentive Scheme aimed at boosting domestic manufacturing.
- **Bulk Drug Park:** Industrial park with common infrastructure for manufacturing APIs and intermediates.
- **Jan Aushadhi Scheme (PMBJP):** Provides affordable quality generic medicines through dedicated retail outlets.
- **India's Global Position:** Among the world's leading producers of generic medicines and vaccines and a major pharmaceutical exporter.

PadhAI-GENERATED UPSC MCQ

Consider the following statements regarding India's pharmaceutical sector:

1. The **Department of Pharmaceuticals** functions under the **Ministry of Chemicals and Fertilizers**.

2. The **Central Drugs Standard Control Organization (CDSCO)** is India's national drug regulatory authority.
3. The **PLI Scheme for Bulk Drugs** aims to promote domestic manufacturing of critical Active Pharmaceutical Ingredients (APIs).

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. STRONGER LAW, SAFER EXAMS: INDIA TIGHTENS THE NOOSE ON PAPER LEAKS



- I. India has introduced a comprehensive legal framework to combat:
 - A. Question paper leaks.
 - B. Cheating syndicates.
 - C. Impersonation.
 - D. Unauthorized access to examination systems.
 - E. Tampering with examination processes.
- II. The reforms seek to:
 - A. Protect the interests of genuine candidates.

- B. Strengthen public trust.
- C. Improve examination governance.
- D. Ensure accountability of institutions.

BACKGROUND / CONTEXT

Public Examinations (Prevention of Unfair Means) Act, 2024

The Act provides a dedicated legal framework to prevent organised malpractices in public examinations.

Objectives

- Ensure fair and transparent examinations.
- Prevent organised cheating networks.
- Protect the integrity of recruitment and entrance tests.
- Deter criminal activities through stringent penalties.

WHAT ARE PUBLIC EXAMINATIONS?

The Act applies to examinations conducted by notified public authorities, including:

- **Union Public Service Commission (UPSC).**
- **Staff Selection Commission (SSC).**
- **Railway Recruitment Boards (RRBs).**
- **National Testing Agency (NTA).**
- Banking recruitment agencies and other notified bodies.

State-level examinations may be covered through corresponding State laws or notifications.

UNFAIR MEANS COVERED UNDER THE ACT

The Act criminalises activities such as:

- Question paper leaks.
- Unauthorized access to question papers.
- Tampering with examination systems.
- Impersonation.
- Manipulation of answer sheets.
- Use of electronic devices for cheating.
- Organised cheating by criminal syndicates.

PENALTIES

Individuals

- Imprisonment and monetary fines for engaging in organised unfair practices.

Organised Crime / Institutions

- Harsher punishment for organised examination fraud.
- Recovery of costs incurred due to cancellation or re-conduct of examinations.
- Action against service providers or institutions involved in malpractice.

OTHER EXAMINATION REFORMS

Technology-Based Security

- Encrypted digital question paper transmission.
- Secure examination software.
- Multi-layer authentication.
- CCTV surveillance.
- Biometric verification.

Institutional Measures

- Improved coordination among agencies.
- Standard Operating Procedures (SOPs).
- Risk assessment and monitoring.
- Enhanced cyber security for examination platforms.

SIGNIFICANCE

Governance

- Improves transparency and accountability.
- Strengthens credibility of recruitment processes.

Students

- Protects deserving candidates.
- Ensures merit-based selection.

Administration

- Discourages organised cheating networks.
- Enhances institutional integrity.

Economy

- Builds confidence in public recruitment systems.



- Reduces administrative costs associated with cancelled examinations.

CHALLENGES

- Tackling sophisticated cyber-enabled cheating.
- Coordinating among multiple examination agencies.
- Maintaining digital security.
- Ensuring timely investigation and prosecution.

WAY FORWARD

- Expand AI-based examination monitoring.
- Strengthen cyber security infrastructure.
- Improve coordination among law enforcement agencies.
- Regularly audit examination systems.
- Increase public awareness regarding legal consequences of malpractice.

KEY HIGHLIGHTS

- **Major Law:** Public Examinations (Prevention of Unfair Means) Act, 2024.
- **Objective:** Prevent paper leaks and organised examination fraud.
- **Coverage:** Public recruitment and entrance examinations conducted by notified authorities.
- **Major Focus:** Transparency, fairness, technology-enabled security, and strict penalties.
- **Strategic Importance:** Protects meritocracy and strengthens public confidence in examination systems.
- **Challenges:** Cyber threats, organised crime, and technological vulnerabilities.
- **Way Forward:** Advanced digital security, AI-enabled monitoring, stronger enforcement, and institutional reforms.

PRELIMS BOOSTER BOX

- Public Examinations (Prevention of Unfair Means) Act, 2024:** India's first dedicated law to

address organised unfair practices in public examinations.

- Purpose:** Prevent paper leaks, impersonation, organised cheating, and manipulation of examination systems.
- Covered Bodies (Illustrative):**
 - A. Union Public Service Commission (UPSC)
 - B. Staff Selection Commission (SSC)
 - C. National Testing Agency (NTA)
 - D. Railway Recruitment Boards (RRBs)
 - E. Other notified public examination authorities
- National Testing Agency (NTA):** Conducts several national-level entrance examinations such as NEET (UG), JEE (Main), CUET, and others.
- Biometric Verification:** Used to prevent impersonation and ensure candidate authenticity.
- Standard Operating Procedures (SOPs):** Uniform guidelines for secure conduct of examinations.
- Cyber Security:** Increasingly important for protecting digital examination systems and encrypted question paper transmission.

PadhAI-GENERATED UPSC MCQ

Consider the following statements regarding the **Public Examinations (Prevention of Unfair Means) Act, 2024**:

1. It provides a legal framework to prevent organised unfair practices such as paper leaks and impersonation in public examinations.
2. It aims to strengthen transparency and credibility in recruitment and entrance examinations.
3. The Act provides for stringent penalties against organised examination fraud.

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. EXPANSION OF WATER METRO SYSTEMS



- I. Water Metro systems aim to:
 - A. Provide clean and efficient public transport.
 - B. Reduce urban traffic congestion.
 - C. Promote electric mobility.
 - D. Improve connectivity between islands, riverbanks, and urban centres.
- II. The initiative aligns with:
 - A. **National Waterways development.**
 - B. Green transportation.
 - C. Urban mobility reforms.
 - D. Climate-friendly infrastructure.

BACKGROUND / CONTEXT

What is a Water Metro?

- A **Water Metro** is an integrated **urban water-based public transport system** using modern ferries connected with road, metro, and bus networks.

Key Features

- Electric or low-emission ferries.
- Modern passenger terminals.

- Integrated ticketing.
- Scheduled operations.
- Safe and accessible transport.

KOCHI WATER METRO

The **Kochi Water Metro** is India's first integrated Water Metro system.

Location

- Kochi, Kerala.

Implementing Agencies

- Kochi Metro Rail Limited (KMRL).**
- Government of Kerala.

Features

- Electric ferries.
- Multiple terminals across islands and mainland.
- Environment-friendly operations.
- Integration with Kochi Metro Rail.

OBJECTIVES OF WATER METRO EXPANSION

- Promote sustainable urban transport.
- Reduce dependence on road transport.
- Improve last-mile connectivity.
- Encourage electric mobility.
- Utilize inland waterways efficiently.

GOVERNMENT INITIATIVES SUPPORTING WATER TRANSPORT

National Waterways Act, 2016

- Declared **111 National Waterways** across India.
- Promotes inland water transport.

Jal Marg Vikas Project (JMVP)

- Develops inland waterways infrastructure on **National Waterway-1 (Ganga).**
- Enhances cargo and passenger movement.

Sagarmala Programme

- Promotes port-led development.
- Supports coastal and inland water transport.
- Improves multimodal logistics.

ROLE OF THE INLAND WATERWAYS AUTHORITY OF INDIA (IWAI)

Established

- 1986

Nodal Ministry

- Ministry of Ports, Shipping and Waterways.

Functions

- Development of inland waterways.
- Navigation infrastructure.
- Passenger and cargo transport.
- Waterway maintenance.

BENEFITS OF WATER METRO SYSTEMS

Environmental

- Lower carbon emissions.
- Reduced air pollution.
- Energy-efficient transport.

Economic

- Lower operating costs.
- Boosts tourism.
- Encourages local economic development.

Urban Mobility

- Reduces road congestion.
- Faster connectivity.
- Supports multimodal transport.

Social

- Better connectivity for island and waterfront communities.
- Improved accessibility.

CHALLENGES

- High initial infrastructure costs.
- Seasonal water-level variations.
- Navigation safety.
- Integration with existing transport systems.
- Maintenance of waterways.

WAY FORWARD

- Expand Water Metro projects in suitable cities.
- Increase deployment of electric ferries.
- Improve multimodal integration.

- Strengthen waterway maintenance.
- Promote public-private partnerships.
- Enhance passenger safety and digital ticketing systems.

KEY HIGHLIGHTS

- **Model Project:** Kochi Water Metro.
- **Type:** Integrated urban water transport system.
- **Major Technology:** Electric ferries.
- **Supporting Institutions:** Inland Waterways Authority of India (IWAI), Kochi Metro Rail Limited (KMRL).
- **Nodal Ministry:** Ministry of Ports, Shipping and Waterways.
- **Supporting Laws:** National Waterways Act, 2016.
- **Strategic Importance:** Sustainable urban mobility, reduced emissions, and efficient utilization of inland waterways.
- **Challenges:** Infrastructure investment, navigation, and seasonal variability.
- **Way Forward:** Expand to more cities, improve multimodal connectivity, and strengthen green transport initiatives.

PRELIMS BOOSTER BOX

- Water Metro:** Integrated urban water transport system using modern ferries and terminals.
- Kochi Water Metro:** India's first Water Metro system.
- Kochi Metro Rail Limited (KMRL):** Implements the Kochi Water Metro project.
- Electric Ferries:** Reduce emissions and operating costs compared to conventional diesel ferries.
- National Waterways Act, 2016:** Declared 111 National Waterways in India.
- Inland Waterways Authority of India (IWAI):**
 - Established: 1986
 - Nodal Ministry: Ministry of Ports, Shipping and Waterways
- National Waterway-1 (NW-1):**
 - River: Ganga-Bhagirathi-Hooghly

- B. Stretch: **Allahabad (Prayagraj) to Haldia**

- VIII. **Jal Marg Vikas Project (JMVP):** Develops navigation infrastructure on NW-1.
- IX. **Sagarmala Programme:** Focuses on port-led development, coastal shipping, and improved logistics.

PadhAI-GENERATED UPSC MCQ

Consider the following statements regarding **Water Metro systems in India:**

1. The **Kochi Water Metro** is India's first integrated urban water transport system.
2. The **Inland Waterways Authority of India (IWAI)** functions under the **Ministry of Ports, Shipping and Waterways**.
3. The **National Waterways Act, 2016** declared **111 National Waterways**.

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. THE PRESIDENT INTERACTS WITH A GROUP OF GRASSROOTS INNOVATORS



- I. The President appreciated innovators who have developed practical and low-cost solutions to local challenges.
- II. The interaction emphasized:
 - A. Promotion of grassroots innovation.
 - B. Recognition of traditional knowledge.
 - C. Encouraging innovation from rural India.
 - D. Supporting sustainable and inclusive development.
- III. Such initiatives help bridge the gap between local ingenuity and national development.

BACKGROUND / CONTEXT

What is Grassroots Innovation?

Grassroots innovation refers to **creative solutions developed by ordinary individuals or local communities** to solve problems using:

- Indigenous knowledge.
- Local resources.
- Affordable technologies.
- Traditional practices.

These innovations are generally:

- Low-cost.
- Sustainable.
- Need-based.
- Easily adaptable by communities.

MAJOR INSTITUTIONS PROMOTING GRASSROOTS INNOVATION

National Innovation Foundation – India (NIF)

Established

- 2000

Department

- Autonomous body under the **Department of Science and Technology (DST)**.

Objectives

- Identify grassroots innovations.
- Support innovators.
- Protect Intellectual Property Rights (IPRs).



- Facilitate value addition and commercialisation.
- Promote sustainable technologies.

Honey Bee Network

A voluntary movement that:

- Documents grassroots innovations.
- Recognises traditional knowledge holders.
- Encourages knowledge sharing while ensuring benefit-sharing.

SUPPORT PROVIDED TO INNOVATORS

The Government supports innovators through:

- Financial assistance.
- Technology development.
- Prototype support.
- Patent facilitation.
- Business incubation.
- Market linkage.
- Capacity building.

ROLE OF THE DEPARTMENT OF SCIENCE AND TECHNOLOGY (DST)

DST promotes:

- Scientific research.
- Innovation ecosystems.
- Technology development.
- Grassroots innovations.
- Startup support.

SIGNIFICANCE OF GRASSROOTS INNOVATION

Social

- Addresses local community problems.
- Improves quality of life.
- Promotes inclusive development.

Economic

- Encourages rural entrepreneurship.
- Generates livelihood opportunities.
- Supports local manufacturing.

Environmental

- Promotes resource-efficient technologies.
- Encourages sustainable solutions.

Scientific

- Integrates traditional knowledge with modern science.
- Expands India's innovation ecosystem.

RELATED INITIATIVES

Startup India

Supports:

- Innovation.
- Entrepreneurship.
- Startup ecosystem.

Atal Innovation Mission (AIM)

Implemented by **NITI Aayog**.

Promotes:

- Innovation culture.
- Atal Tinkering Labs.
- Incubation centres.
- Entrepreneurship.

National Education Policy (NEP) 2020

Encourages:

- Research.
- Creativity.
- Innovation.
- Problem-solving skills.

CHALLENGES

- Limited awareness among rural innovators.
- Difficulty in accessing finance.
- Weak market linkages.
- Intellectual Property Rights protection.
- Commercialisation challenges.

WAY FORWARD

- Strengthen innovation incubation centres.
- Improve patent support.
- Promote university-rural innovation partnerships.
- Expand digital platforms for innovators.



- Enhance financial assistance and market access.
- Encourage innovation-based entrepreneurship in rural India.

KEY HIGHLIGHTS

- **Occasion:** President interacted with grassroots innovators.
- **Venue:** Rashtrapati Bhavan.
- **Major Focus:** Innovation, traditional knowledge, rural entrepreneurship, and sustainable development.
- **Key Institution:** National Innovation Foundation – India (NIF).
- **Nodal Department:** Department of Science and Technology (DST).
- **Supporting Initiatives:** Startup India, Atal Innovation Mission, Honey Bee Network.
- **Strategic Importance:** Promotes inclusive innovation and strengthens India's innovation ecosystem.
- **Challenges:** Commercialisation, IPR protection, financing, and scaling up.
- **Way Forward:** Better institutional support, funding, incubation, and market connectivity.

PRELIMS BOOSTER BOX

- Grassroots Innovation:** Low-cost, community-based innovation developed using local knowledge and resources.
- National Innovation Foundation – India (NIF):**
 - Established: **2000**
 - Autonomous body under the **Department of Science and Technology (DST)**.
- Department of Science and Technology (DST):** Functions under the **Ministry of Science and Technology**.
- Honey Bee Network:** Documents and promotes grassroots innovations while advocating fair recognition and benefit-sharing for innovators.

- Atal Innovation Mission (AIM):** Flagship innovation initiative of **NITI Aayog**.
- Startup India:** Launched in **2016** to promote entrepreneurship and innovation.
- Intellectual Property Rights (IPRs):** Legal rights protecting inventions, designs, trademarks, copyrights, and geographical indications.
- Patent:** Grants exclusive rights to an inventor for a new, useful, and non-obvious invention for a specified period.

PadhAI-GENERATED UPSC MCQ

Consider the following statements:

- The **National Innovation Foundation – India (NIF)** is an autonomous institution under the **Department of Science and Technology (DST)**.
- The **Atal Innovation Mission (AIM)** is implemented by **NITI Aayog**.
- Grassroots innovations generally focus on low-cost, locally relevant solutions using indigenous knowledge.

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. CHIEF OF THE ARMY STAFF LAUNCHES INDIGENOUS XTREME WEATHER GRADE DIESEL



- I. The newly developed diesel is specially formulated for **sub-zero temperatures** encountered in areas such as **Ladakh, Siachen Glacier, and other Himalayan regions.**
- II. It offers:
 - A. Improved engine performance in extreme cold.
 - B. Better fuel flow at very low temperatures.
 - C. Enhanced operational readiness of the Armed Forces.
- III. The initiative reflects India's growing capability in **indigenous defence technologies** and **specialized fuel development.**

BACKGROUND / CONTEXT

What is Xtreme Weather Grade Diesel?

It is a specially engineered diesel fuel capable of operating efficiently under **extreme cold climatic conditions.**

Unlike conventional diesel, it:

- Remains fluid at very low temperatures.
- Prevents fuel waxing and gelling.
- Ensures reliable engine starting.

- Supports uninterrupted military operations.

WHY IS SPECIAL DIESEL REQUIRED?

In high-altitude regions:

- I. Temperatures can fall below **-30°C** or even lower.
- II. Conventional diesel may:
 - A. Become viscous.
 - B. Form wax crystals.
 - C. Block fuel filters.
 - D. Prevent engine ignition.

Extreme Weather Grade Diesel overcomes these challenges.

KEY FEATURES

Low-Temperature Performance

- Operates efficiently in severe cold.
- Maintains fuel flow in sub-zero temperatures.

Enhanced Operational Reliability

Supports:

- Military vehicles.
- Generators.
- Engineering equipment.
- Logistics vehicles.

Indigenous Development

- Developed using Indian scientific and industrial capabilities.
- Reduces dependence on imported specialized fuels.

Supports National Security

Ensures uninterrupted logistics and mobility in strategically important border regions.

SIGNIFICANCE

Defence

- Improves operational preparedness.
- Enhances mobility in forward areas.
- Supports round-the-clock military operations.

Strategic

- Strengthens self-reliance in defence logistics.

- Reduces import dependence.

Technological

- Demonstrates India's capability in advanced fuel technology.
- Encourages defence innovation.

Economic

- Promotes indigenous manufacturing.
- Supports the domestic defence-industrial ecosystem.

RELATED INITIATIVES

Atmanirbhar Bharat

Promotes:

- Indigenous defence production.
- Domestic research and development.
- Strategic self-reliance.

Make in India

Encourages:

- Domestic manufacturing.
- Technology development.
- Innovation.

Innovations for Defence Excellence (iDEX)

Supports:

- Startups.
- MSMEs.
- Defence technology innovation.

CHALLENGES

- Large-scale production.
- Maintaining consistent fuel quality.
- Logistics in remote high-altitude regions.
- Continuous testing under extreme climatic conditions.

WAY FORWARD

- Expand indigenous development of specialised defence fuels.
- Strengthen collaboration among defence laboratories, oil companies, and industry.

- Enhance testing infrastructure for extreme climatic conditions.
- Integrate advanced fuel technologies into future military logistics.

KEY HIGHLIGHTS

- **Innovation:** Indigenous Xtreme Weather Grade Diesel.
- **Launched by:** Chief of the Army Staff (COAS).
- **Purpose:** Reliable operation of vehicles and equipment in extreme cold conditions.
- **Major Beneficiaries:** Indian Army and other defence forces operating in high-altitude regions.
- **Strategic Importance:** Improves operational readiness and strengthens defence self-reliance.
- **Supporting Initiatives:** Atmanirbhar Bharat, Make in India, iDEX.
- **Challenges:** Production, logistics, quality assurance, and harsh-weather testing.

PRELIMS BOOSTER BOX

- **Atmanirbhar Bharat:** National initiative to promote self-reliance across strategic sectors, including defence.
- **Make in India:** Launched in **2014** to boost domestic manufacturing and innovation.
- **iDEX (Innovations for Defence Excellence):** Flagship initiative of the **Ministry of Defence** to foster innovation by startups and MSMEs.
- **High-Altitude Operations:** Regions such as **Ladakh** and **Siachen Glacier** experience extremely low temperatures, requiring specialised equipment and fuels.
- **Diesel Waxing:** At very low temperatures, paraffin wax in diesel can crystallise, clogging fuel filters and affecting engine performance.
- **Specialised Defence Fuels:** Designed to ensure reliable functioning of military platforms under extreme climatic conditions.

PadhAI-GENERATED UPSC MCQ



Consider the following statements regarding the Indigenous Xtreme Weather Grade Diesel:

1. It is designed to enable reliable operation of military vehicles in extremely low-temperature conditions.
2. One of its objectives is to reduce India's dependence on imported specialised defence fuels.
3. The initiative supports the broader vision of **Atmanirbhar Bharat** in the defence sector.

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)