8. Short news

1. Authorised Economic Operator (AEO) Scheme

Recently, WTO praised India's Authorised Economic Operator (AEO) scheme for significantly increasing MSME participation in international trade and promoting inclusive, secure, and efficient customs operations.

About AEO Scheme

The Authorised Economic Operator (AEO) programme recognises businesses that meet specific compliance and security standards as 'trusted traders', entitling them to faster customs clearance, reduced inspections, and deferred duty payments. It aims to ease customs compliance and enhance global trade competitiveness for MSMEs. The AEO programme was launched as a pilot in 2011 by the Central Board of Indirect Taxes and Customs (CBIC). It was revised in 2016 to merge India's earlier Accredited Client Programme with the AEO scheme under the World Customs Organization's SAFE Framework of Standards, providing a global model for secure and efficient customs operations.

Impact and Reforms for MSMEs

The WTO highlighted India's liberalised MSME package (2021) as a model initiative for making trusted trader programmes inclusive and accessible to smaller businesses.

Reforms simplified certification- MSMEs now need 10 customs documents/year instead of 25, and two years operational history instead of three.

Reduced Processing time- Reduced from one month to 15 days (tier-I) and from six months to three months (tier-II).

Relaxed bank guarantee norms- MSME tier-I certificate holders now furnish only 25% of the standard requirement, tier-II firms provide 10% which is up to 50% for non-certified traders

Benefits- Direct port entry, fast-tracked refunds, priority adjudication, and dedicated port relationship managers, reducing logistics costs and turnaround times.

2. 'AJIT' AND 'APARAJIT'

The Indian Coast Guard (ICG) achieved a major milestone with the launch of two new Fast Patrol Vessels (FPVs) named ICGS Ajit and ICGS Aparajit at Goa Shipyard Limited (GSL).

About ICGS Ajit & ICGS Aparajit

These vessels are the seventh and eighth in a series of eight indigenously built FPVs being constructed by GSL for the ICG,

Significance- It marks an important step forward in enhancing the nation's coastal surveillance and response capabilities.

Built by- Goa Shipyard Limited (GSL)

Designed and built entirely in India, showcasing indigenous shipbuilding expertise.

Primary Missions- Coastal patrol, fisheries protection, anti-smuggling, anti-piracy, and search & rescue (SAR) operations.

Operational Area- Particularly effective around India's Exclusive Economic Zone (EEZ) and island territories, ensuring round-the-clock maritime security.

Features

Dimensions and Design- Length- 52 metres & Displacement- 320 tonnes

Propulsion System- It's equipped with Controllable Pitch Propellers (CPP)

CPP- It's the first of their kind in this class in India which ensures superior manoeuvrability, speed, and fuel efficiency.

3. Survey Vessel 'Ikshak'

The Indian Navy will commission 'Ikshak', the third Survey Vessel (Large) (SVL), at the Naval Base Kochi.

About Survey Vessel 'Ikshak'

Construction By- Constructed by Garden Reach Shipbuilders & Engineers (GRSE) Ltd., Kolkata, under the

supervision of the Directorate of Ship Production and the Warship Overseeing Team (Kolkata).
Indigenisation- Features over 80% indigenous content, highlighting the success of collaboration between GRSE and India's MSME network in defence manufacturing.
Series- Third vessel in the Survey Vessel (Large) class, following INS Sandhayak and INS Nirdeshak.

Design and Capabilities

Purpose- Designed to conduct high-precision hydrographic surveys, contributing to-
1. Maritime safety and navigation.
2. Production of nautical charts and publications.
3. Supporting both defence and commercial maritime operations.

Dual-Role Functionality- Can be deployed for Humanitarian Assistance and Disaster Relief (HADR) operations. Configurable as a Hospital Ship during emergencies, expanding its utility beyond defence roles.
Women's Accommodation- *Ikshak* is the first vessel in the SVL series to feature dedicated accommodation for women personnel.
Symbolism of the Name- The name *"Ikshak"* translates to "The Guide", symbolising the vessel's mission to chart uncharted waters.

4. Military Communication Satellite CMS-03 (GSAT-7R)

The Indian Space Research Organisation (ISRO) will launch CMS-03, also known as GSAT-7R, from the Satish Dhawan Space Centre (SDSC), Sriharikota, Andhra Pradesh.

About CMS-03 (GSAT-7R)

Type- Multi-band communication satellite for defence services.
Launch Vehicle- Launch Vehicle Mark 3 (LVM3)
Orbit- To be launched into Geosynchronous Transfer Orbit (GTO). A GTO is an elliptical orbit used to transfer a satellite from low Earth orbit (LEO)to a geosynchronous orbit (GEO)
Weight- Approximately 4,400 kg, making it the heaviest communication satellite launched from Indian soil.
Coverage- Designed to provide secure communication services over a wide oceanic region, including the entire Indian landmass.

About Launch Vehicle Mark-3 (LVM3)

LVM3 is India's most powerful launch vehicle, developed by ISRO. It is a three-stage heavy-lift rocket designed to carry communication, navigation, and deep-space missions (like Chandrayaan & Gaganyaan).
Stages-
Stage 1 – Liquid Propellant – Provides initial thrust after boosters separate
Stage 2 – Solid Propellant – Two large strap-on boosters for liftoff
Stage 3 – Cryogenic (Liquid Hydrogen + Liquid Oxygen) – Final stage which injects satellite into orbit

About Geostationary satellite

A geostationary satellite is one that orbits the Earth at the same rotational speed and in the same direction as Earth's rotation, appearing stationary over a fixed point on the equator.
Orbital Altitude- A geostationary satellite orbits at an altitude of approximately 35,786 kilometers above the Earth's equator.
Orbital Period- The satellite completes one full orbit every 24 hours, matching the Earth's rotational period.
Orbital Plane- The satellite's orbit is circular and lies in the plane of the Earth's equator.
Coverage- Provides continuous coverage of a large area (~1/3 of Earth's surface). Three satellites can cover most of the globe (except polar regions).
Applications-
Communication satellites- e.g., INSAT series (India).
Weather monitoring- e.g., METEOSAT, INSAT-3D.
Broadcasting- TV, radio, and internet services.

Navigation augmentation- e.g., GAGAN system in India.

5. NSC Seed Processing Plants

Union Minister for Agriculture & Farmers' Welfare and Rural Development inaugurated the National Seeds Corporation's (NSC) at Pusa Complex, New Delhi.

About the Seed Processing Plant

New Delhi (Pusa Complex)- Vegetable and flower seed processing plant with a capacity of 1 tonne per hour.

Other Five Plants- Located at Bareilly, Dharwad, Hassan, Suratgarh, and Raichur, each with a capacity of 4 tonnes per hour.

Technology and Features- Equipped with advanced processing and packaging technologies to ensure- Enhanced seed purity, viability, and quality control. Improved efficiency in seed production and distribution.

Objective- To strengthen India's seed production ecosystem and ensure farmers, especially small and marginal ones, have access to reliable, high-quality seeds.

Other Digital Initiatives Launched

Seed Management 2.0 System- A digital platform launched to streamline seed production, storage, and distribution processes.

Online Seed Booking Platform- Enables farmers to book seeds online, ensuring transparency, accessibility, and convenience in procurement. Aimed at eliminating spurious and substandard seed distribution, which has been a major concern among farmers.

About National Seeds Corporation (NSC)

Established- 1963.

Ownership- Fully government-owned Schedule 'B' Mini Ratna Category-I company under the Ministry of Agriculture & Farmers' Welfare.

Role- Production, processing, and distribution of high-quality certified seeds of various crops. Plays a pivotal role in seed multiplication, certification, and research collaboration to boost productivity.

Network- Operates multiple seed farms, testing laboratories, and processing units across India.

6. Benzene

Two hundred years after its discovery by Michael Faraday in 1825, benzene remains a cornerstone of industrial chemistry.

Benzene

Benzene (C_6H_6) is an aromatic hydrocarbon consisting of six carbon atoms forming a hexagonal ring with alternating single and double bonds between them. It is a colorless, flammable liquid with a sweet odor. It is primarily derived from petroleum and natural gas.

Early Uses- Initially derived from coal tar — used as a solvent, in perfumes, and even to decaffeinate coffee before toxicity was known.

Industrial Transformation- The 20th-century petrochemical revolution made benzene production scalable using crude oil and natural gas as feedstocks.

Applications of Benzene

Industrial Uses- Benzene became a key feedstock for multiple high-demand materials-

Styrene → Polystyrene plastics (cups, foams, packaging).

Cumene → Phenol and Acetone (polycarbonates, epoxy resins).

Cyclohexane → Nylon 6 and Nylon 6,6 (textiles, engineering plastics).

Solvents- It is used as a solvent in the production of paints, coatings, and adhesives.

Pharmaceuticals- Used in the synthesis of various drugs like paracetamol, aspirin, and other organic compounds.

Explosives and Dyes- Benzene is used in the manufacture of explosives (such as TNT) and dyes.

Fuel Additives- Benzene is sometimes present in gasoline and serves as an octane booster.

Laboratory Use- Used in laboratories for various chemical reactions and as a solvent.

Benzene in Advanced Materials

Polymers- Benzene's delocalised electrons enable the creation of conducting polymers such as-
Polyaniline – used in sensors and anticorrosion coatings.
Poly(p-phenylene vinylene) (PPV) – used in polymer LEDs.
Organic Electronics- OLEDs, organic field-effect transistors (OFETs), and organic photovoltaics (OPVs) — crucial for flexible electronics, displays, and solar cells.

Hazards and Risks

Health Risks-
Carcinogenicity- Benzene is classified as a Group 1 carcinogen by the International Agency for Research on Cancer (IARC). Long-term exposure can cause leukemia, a cancer of the blood-forming tissues.
Blood Disorders- Chronic exposure can lead to aplastic anemia, affecting bone marrow and red blood cell production.
Neurological Effects- Short-term exposure to high levels of benzene can lead to dizziness, headaches, drowsiness, and unconsciousness.

Environmental Impact-

Air Pollution- Benzene is a volatile organic compound (VOC) that contributes to air pollution and the formation of ground-level ozone (smog).
Water Contamination- Benzene can leach into water sources from industrial waste, leading to contamination and posing health risks to communities dependent on water sources.

7. Cryodil

Scientists at the National Institute of Animal Nutrition and Physiology (NIANP), Bengaluru, under the Indian Council of Agricultural Research (ICAR), have developed CRYODIL, a solution for cryopreserving buffalo semen.

About CRYODIL

Nature- A ready-to-use, egg yolk-free semen extender.
Longer Shelf Life- 18 months, compared to a few hours for egg yolk-based extenders.
Cost-Effective- Cheaper to produce than conventional formulations.
Developed by- ICAR–NIANP, Bengaluru.
Biosecure- Eliminates microbial risks associated with egg components.
Patent- Filed for both the product and its preparation method.
Testing- Conducted on 24 buffalo bulls, showing significantly improved post-thaw motility and viability of sperm compared to conventional extenders.
Significance- CRYODIL marks the first indigenously developed product of its kind in India, designed to improve buffalo breeding efficiency and dairy productivity.

Problem with Traditional Egg Yolk-Based Extenders

Short Shelf Life- Fresh egg yolk lasts only a few hours and varies in composition between eggs.
Variable Composition- Differences between eggs lead to inconsistent sperm survival and motility.
Contamination Risk- Egg Yolks can carry harmful microbes, posing biosecurity risks to animal health.

8. Redrawing Boundaries of Wildlife Sanctuaries

The Ladakh State Wildlife Board (LSWB) has proposed a major redrawing of boundaries for the Karakoram and Changthang Wildlife Sanctuaries.

About Karakoram Wildlife Sanctuary

Location- Situated in the Karakoram Range of Ladakh, in Jammu & Kashmir, near the Indo-Pakistan border.
Geographical Significance- One of the highest-altitude wildlife sanctuaries in India (~4,000–5,800 m).
Climate- Cold desert climate – long, harsh winters and short summers with very low precipitation.
Rivers- Part of the Shyok River basin, a tributary of the Indus River system.

Vegetation- Sparse alpine and cold desert vegetation; mostly grasses, sedges, cushion plants, and hardy shrubs.
Flora- Includes Artemisia, Caragana, Ephedra, and Juniper species adapted to arid conditions.
Fauna- Home to Snow Leopard, Tibetan Wolf, Blue Sheep (Bharal), Ibex, Eurasian Lynx.

About Changthang Wildlife Sanctuary

Location- Situated in southeastern Ladakh, extending along the Changthang Plateau, bordering Tibet (China).
Geographical Significance- Contains Tso Moriri, Tso Kar, and Pangong Tso lakes — major Ramsar sites.
Climate- Extreme cold desert climate — subzero temperatures, high wind, and low rainfall (<100 mm annually).
Rivers- Drained by small streams feeding the Indus River system
Vegetation- Dominated by alpine steppe vegetation; grassy meadows near lakes, sparse shrubs elsewhere.
Fauna- Important habitat for Kiang (Tibetan Wild Ass), Snow Leopard, Tibetan Gazelle, Argali (Great Tibetan Sheep), and Tibetan Wolf.

9. 53rd Chief Justice of India

Chief Justice of India B.R. Gavai has formally recommended Justice Surya Kant, the senior-most judge of the Supreme Court, as his successor and the 53rd Chief Justice of India (CJI).

Appointment Procedure

Legal Framework- The appointment of the Chief Justice of India follows the Memorandum of Procedure (MoP), a convention developed in consultation between the judiciary and the executive.

Process

Initiation- The Law Ministry writes to the outgoing CJI approximately a month before retirement, seeking a recommendation for the next CJI.
Recommendation- The senior-most judge of the Supreme Court (in accordance with convention) is recommended for the post.
Executive Process- The recommendation is forwarded to the Prime Minister, who advises the President of India to make the appointment.
Oath of Office- The President administers the oath of office to the incoming CJI under Article 124(6).
Convention- The practice of appointing the senior-most judge is a constitutional convention, not explicitly written in law, but upheld for judicial independence and institutional continuity.

About Memorandum of Procedure (MoP) for Appointment of Judges

The Memorandum of Procedure (MoP) is a convention that outlines the process for appointment and transfer of judges to the Supreme Court and High Courts in India. It is not a law, but a set of guidelines agreed upon between the Judiciary and the Executive.

Background

The MoP derives from Article 124 (Supreme Court judges) and Article 217 (High Court judges) of the Constitution. It evolved through the "Three Judges Cases" (1981, 1993, 1998), which established the Collegium System. The Collegium recommends names, while the Executive formally appoints them.