

DIA, DEOGHAR IAS ACADEMY

Daily News Feed

D.N.F

26.10.2025

**Sabaijor Complex, Near Jamunajor Pul,
Castair Town**

Deoghar, Mob: -9162500508

Season's first cyclonic storm brewing over Bay of Bengal, likely to cross A.P. coast in two days

The Hindu Bureau
CHENNAI

The depression hovering over the Bay of Bengal is expected to gradually gain strength as a cyclonic storm, likely to be named Cyclone Montha, by Monday. It is likely to cross the Andhra Pradesh coast around Kakinada by Tuesday night, with maximum wind speeds of 90-100 kmph, gusting to 110 kmph, the India Meteorological Department said.

The weather system will begin to cause intense rainfall over north Tamil Nadu from Sunday. The Regional Meteorological Centre (RMC), Chennai, has issued an orange alert indicating



Pedestrians walk on a waterlogged street in Tirupati after a flashflood on Saturday. K.V. POORNACHANDRA KUMAR

heavy to very heavy rainfall for Chennai, Ranipet and Tiruvallur on Monday, as the season's first cyclonic storm intensifies and moves closer to the Tamil Nadu coast.

The weather system will also trigger intense downpours in coastal Andhra Pradesh, Rayalaseema, Kerala, and Puducherry, apart from Tamil Nadu, on Sunday. Some parts of

coastal Karnataka may also experience heavy rainfall early next week. Red alerts have been issued to coastal Andhra Pradesh and Rayalaseema, indicating the possibility of extremely heavy rainfall at one or two places for three days from Monday.

The RMC has warned that squally winds with speeds reaching 50-60 kmph may prevail at isolated places over coastal Andhra Pradesh and Rayalaseema between Monday and Wednesday. Fishermen have also been advised to return to the coast immediately as squally weather with wind speeds gusting to 55 kmph is likely to prevail along and off the

Tamil Nadu coast, over the Gulf of Mannar and the Comorin area.

Cabinet Secretary T.V. Somanathan chaired a meeting of the National Crisis Management Committee to review preparedness for the impending cyclone. National Disaster Response Force teams will be mobilised by Sunday and relief teams of the Indian Army, Navy, Air Force, and Coast Guard are on alert.

Andhra Pradesh Chief Minister N. Chandrababu Naidu held a teleconference with District Collectors, Superintendents of Police, and other senior officials on cyclone preparedness on Saturday.

GS Paper Mapping:

GS Paper 1 – Geography (Climatology, Tropical Cyclones in India)

GS Paper 3 – Disaster Management (Preparedness, Institutional Response, Early Warning Systems)

English Summary:

A depression over the Bay of Bengal is expected to intensify into the **season's first cyclonic storm**, to be named **Cyclone Montha**, by Monday. The storm is likely to cross the **Andhra Pradesh coast near Kakinada by Tuesday night**, with **wind speeds of 90–100 kmph**, gusting up to **110 kmph**, according to the **India Meteorological Department (IMD)**.

☁ Meteorological Developments:

- The system will cause **intense rainfall over north Tamil Nadu, coastal Andhra Pradesh, and Rayalaseema** starting Sunday.
- **Heavy to very heavy rain** is predicted in **Chennai, Ranipet, Tiruvallur**, and other districts of Tamil Nadu.
- The **Regional Meteorological Centre (RMC)**, Chennai, has issued an **orange alert**, while **red alerts** were issued for **coastal Andhra Pradesh and Rayalaseema** from Monday.

⚠ Warnings and Preparedness:

- **Squally winds** of 50–60 kmph may prevail in coastal regions of Andhra Pradesh, Rayalaseema, and Tamil Nadu.
- **Fishermen have been warned** not to venture into the sea.
- **Cabinet Secretary T.V. Somanathan** chaired a **National Crisis Management Committee (NCMC)** meeting to review preparedness.
- **National Disaster Response Force (NDRF)**, along with the **Indian Army, Navy, Air Force, and Coast Guard**, has been placed on alert.
- **Andhra Pradesh Chief Minister N. Chandrababu Naidu** held an emergency review meeting with district officials to coordinate disaster response.

📍 Impact Regions:

- **States likely to be affected:** Andhra Pradesh, Tamil Nadu, Kerala, Puducherry, and coastal Karnataka.
- **Areas of maximum impact:** Kakinada, North Tamil Nadu, and parts of Rayalaseema.

Hindi Summary (हिंदी सारांश):

बंगाल की खाड़ी में बना निम्न दबाव क्षेत्र धीरे-धीरे मौसम के पहले चक्रवाती तूफान में बदलने जा रहा है, जिसका नाम 'मोंथा' (Montha) रखा जाएगा। यह तूफान सोमवार तक पूरी तरह विकसित होकर मंगलवार रात को आंध्र प्रदेश के काकीनाडा तट से टकराने की संभावना है।

☞ मौसम संबंधी स्थिति:

- इस तूफान की गति 90-100 किमी प्रति घंटा तक पहुँच सकती है, जो 110 किमी/घंटा तक झोंकों के रूप में बढ़ सकती है।
- उत्तर तमिलनाडु, आंध्र प्रदेश, और रायलसीमा में रविवार से भारी वर्षा की संभावना है।
- चेन्नई, रानीपेट, तिरुवल्लूर आदि जिलों में भारी से बहुत भारी वर्षा की चेतावनी दी गई है।
- चेन्नई मौसम केंद्र ने ऑरेंज अलर्ट, जबकि आंध्र प्रदेश और रायलसीमा के लिए रेड अलर्ट जारी किया है।

⚠ चेतावनी और तैयारी:

- तटीय क्षेत्रों में 50-60 किमी प्रति घंटे की गति से तेज हवाएँ चलने की संभावना है।
- मछुआरों को समुद्र में न जाने की सलाह दी गई है।
- कैबिनेट सचिव टी.वी. सोमनाथन ने राष्ट्रीय संकट प्रबंधन समिति (NCCM) की बैठक की अध्यक्षता की।
- राष्ट्रीय आपदा प्रतिक्रिया बल (NDRF) और सेना, नौसेना, वायुसेना, तटरक्षक बल को अलर्ट पर रखा गया है।
- आंध्र प्रदेश के मुख्यमंत्री एन. चंद्रबाबू नायडू ने सभी जिलाधिकारियों और पुलिस अधीक्षकों के साथ तैयारियों की समीक्षा की।

🌀 प्रभावित क्षेत्र:

- प्रभावित राज्य: आंध्र प्रदेश, तमिलनाडु, केरल, पुडुचेरी, और तटीय कर्नाटक।
- सर्वाधिक प्रभावित क्षेत्र: काकीनाडा और उत्तर तमिलनाडु तटवर्ती इलाके।

Key Points for Exam Notes:

- **Name:** Cyclone Montha (first of the season).
- **Region:** Bay of Bengal.
- **Landfall:** Near Kakinada, Andhra Pradesh.
- **Wind Speed:** 90-110 kmph (gusting).
- **Preparedness:** NCMC, IMD, NDRF, Army, Navy, Air Force on alert.
- **Alerts:** Red (A.P., Rayalaseema), Orange (North Tamil Nadu).
- **Implications:** Heavy rainfall, flash floods, disruption of coastal life and fisheries.
- **GS Relevance:**
 - **GS Paper 1:** Physical Geography – Cyclones, Indian Monsoon Systems.
 - **GS Paper 3:** Disaster Management – Early Warning, Response Mechanisms, Role of NDRF.

Kerala govt. to prepare oil spill crisis management plan

Dhinesh Kallungal
THIRUVANANTHAPURAM

In the wake of the two shipwrecks off the coast of Kerala, which raised serious concern about the threat posed by oil spillage to marine biodiversity, the State government will frame a detailed oil spill crisis management plan to prevent oil spills and mitigate their impact.

The Ministry of Defence, the nodal ministry for handling crises arising out of the spill of oil and hazardous substances at sea, has directed the State to notify the plan in line with the one recently prepared by Tamil Nadu. For

The Defence Ministry has directed the State to notify the plan in line with the one prepared by T.N.

Kerala, with a coastline of around 590 km along the west coast and close to the international shipping channel, the risk of oil spills is high as the Vizhinjam International Seaport is hardly 10 nautical miles from the east-west shipping lane.

S. Sreekala, chairperson, Kerala State Pollution Control Board, told *The Hindu* that a Bengaluru-based agency has been se-

lected for preparing the plan.

The agency will prepare a contingency plan in line with the national contingency plan. "The plan will define the standard operating procedures to be followed by different agencies in the event of an oil spill," she said.

Committees formed
As per a directive of the Centre, the State has now constituted a seven-member core group headed by the Chief Secretary, in addition to oil spill crisis management groups at the State, district, and local levels to manage oil spill incidents.

GS Paper Mapping:

GS Paper 3 – Environment (Pollution Control, Disaster Management, Marine Ecology)

GS Paper 2 – Governance (Centre-State Coordination, Environmental Institutions)

English Summary:

The **Kerala government** has decided to frame a **comprehensive Oil Spill Crisis Management Plan** to tackle and mitigate marine oil spill disasters along its **590 km coastline**. This move follows **two shipwrecks off the Kerala coast**, which posed a serious threat to **marine biodiversity** and coastal ecosystems.

 **Key Highlights:**

1. **Centre's Directive:**

- The **Ministry of Defence**, which is the nodal ministry for handling oil spill crises, has directed Kerala to prepare its plan **in line with Tamil Nadu's model** and the **National Contingency Plan**.

2. **Rationale:**

- Kerala's coastline lies close to an **international shipping channel**, and the risk of oil spills is high, especially near the **Vizhinjam International Seaport** (only 10 nautical miles from major shipping routes).

3. Plan Framework:

- The **Kerala State Pollution Control Board (KSPCB)** is the **nodal agency** for drafting the plan.
- The plan will lay down **Standard Operating Procedures (SOPs)** for various agencies to follow during oil spills.
- It will include a **contingency protocol** for rapid response, cleanup, and containment of hazardous substances.

4. Institutional Setup:

- The state has constituted a **seven-member core group**, headed by the **Chief Secretary**, to oversee the preparation of the plan.
- Additional **district-level and local committees** will also be established to manage site-specific responses.

5. Environmental and Strategic Importance:

- The initiative will strengthen Kerala's **disaster preparedness** in line with **India's National Oil Spill Disaster Contingency Plan (NOSDCP)**.
- It highlights the importance of **marine ecosystem protection, coastal pollution management, and Centre-State environmental coordination**.

Hindi Summary (हिंदी सारांश):

केरल सरकार ने समुद्री पर्यावरण और जैव विविधता पर तेल रिसाव (oil spill) के खतरे को देखते हुए **ऑयल स्पिल संकट प्रबंधन योजना (Oil Spill Crisis Management Plan)** तैयार करने का निर्णय लिया है। हाल ही में **केरल तट के पास दो जहाज़ दुर्घटनाएँ हुईं**, जिनसे तेल रिसाव का बड़ा खतरा पैदा हुआ।

🔑 मुख्य बिंदु:

1. रक्षा मंत्रालय का निर्देश:

- **रक्षा मंत्रालय**, जो तेल रिसाव से उत्पन्न संकटों के लिए नोडल मंत्रालय है, ने केरल को **तमिलनाडु की योजना** के अनुरूप एक विस्तृत योजना तैयार करने को कहा है।

2. भौगोलिक जोखिम:

- लगभग **590 किमी लंबी तटरेखा** और **अंतरराष्ट्रीय शिपिंग चैनल** के पास स्थित होने के कारण, विशेष रूप से **विझिंजम बंदरगाह (Vizhinjam Port)** के आसपास तेल रिसाव का खतरा अधिक है।

3. योजना की रूपरेखा:

- **केरल राज्य प्रदूषण नियंत्रण बोर्ड (KSPCB)** इस योजना को तैयार करेगा।
- इसमें **मानक संचालन प्रक्रिया (SOPs)** और **आपातकालीन प्रतिक्रिया (contingency plan)** का ढांचा शामिल होगा।
- विभिन्न एजेंसियों के लिए तेल रिसाव की स्थिति में कार्रवाई की स्पष्ट रूपरेखा तय की जाएगी।

4. संस्थागत व्यवस्था:

- राज्य सरकार ने **मुख्य सचिव की अध्यक्षता में सात सदस्यीय कोर समिति** बनाई है।
- साथ ही **जिला एवं स्थानीय स्तर पर भी संकट प्रबंधन समूह** गठित किए जा रहे हैं।

5. पर्यावरणीय महत्व:

- यह योजना भारत की **राष्ट्रीय तेल रिसाव आपदा आपात योजना (NOSDCP)** के अनुरूप होगी।
- इससे **समुद्री जैव विविधता की सुरक्षा, प्रदूषण नियंत्रण, और राज्य-केंद्र समन्वय** को बल मिलेगा।

Key Points for Exam Notes:

- **Topic:** Oil Spill Disaster Management in Coastal India.
- **Key Agency:** Kerala State Pollution Control Board (KSPCB).
- **Nodal Ministry:** Ministry of Defence.
- **Reference Model:** Tamil Nadu's Oil Spill Plan & National Contingency Plan (NOSDCP).
- **Environmental Concern:** Threat to Marine Biodiversity, Pollution in Arabian Sea.
- **Relevance:**
 - **GS Paper 3:** Disaster Management, Environmental Pollution, Conservation.
 - **GS Paper 2:** Centre-State Relations, Institutional Frameworks for Disaster Response.

Centre announces Rashtriya Vigyan Puraskar for scientific achievements

Jacob Koshy

NEW DELHI

The Centre announced the Rashtriya Vigyan Puraskar (RVP) – its Padma-style national awards for scientific achievement with 24 individual awards and one team honour – on Saturday. Eminent physicist Jayant Vishnu Narlikar, who passed away in May, was announced the recipient of the Vigyan Ratna, an award for lifetime contribution.

This year, eight scientists were selected for the Vigyan Shri awards: Gyanendra Pratap Singh, Yusuf Mohammed Shaikh, K. Thangaraj, Pradeep Thapalil, Aniruddha Balchandra Pandit, Venkata Mohan, Mahan Mj and Jayan N.

Recipients for the Vigyan Yuva awards: Jagadis Gupta Kapuganti, Satendra Kumar Mangrauthia, Debarka Sengupta, Deepa



Jayant Vishnu Narlikar, who passed away in May this year, was announced the recipient of the Vigyan Ratna. THULASI KAKKAT

Agashe, Dibyendu Das, Waliur Rahman, Arkaprava Basu, Sabyasachi Mukherjee, Shweta Prem Agrawal, Suresh Kumar, Amit Kumar Agrawal, Surhud Shrikant More, Ankur Garg and Mohansankar Sivaprakasam.

The Vigyan Team award went to the CSIR Aroma Mission.

Last August, ahead of National Space Day, 2024,

the inaugural RVP ceremony was held at the Rashtrapati Bhavan, with President Droupadi Murmu presenting the awards to 33 scientists. This year, the announcement had been delayed for nearly two months. Last year, there were allegations that the award selection process was not fair, and speculation that those scientists critical of government poli-

cies had been ousted at the last minute. An independent panel – the Rashtriya Vigyan Puraskar Committee, steered by the Principal Scientific Adviser – decides on award recipients and makes a recommendation to the Minister of Science and Technology. It is unclear if the Minister has a veto on the recommendation.

The Vigyan Ratna aims at recognising lifetime achievements and contributions made in any field of science and technology. Vigyan Shri is awarded for distinguished contributions in any field of science and technology. Vigyan Yuva award is for young scientists under the age of 45 years to recognise their exceptional contributions. Vigyan Team award will be given every year to a team, comprising three or more scientists, researchers or innovators.

GS Paper Mapping:

GS Paper 3 – Science & Technology (Achievements of Indians in Science and Technology, Institutional Support, Awards and Recognition)

GS Paper 2 – Governance (Policy on Science Promotion, Institutional Frameworks)

English Summary:

The **Government of India** has announced the **Rashtriya Vigyan Puraskar (RVP)** — a **Padma-style national award** series recognizing excellence in science and technology. It comprises **24 individual awards** and **one team award**, recognizing lifetime achievements, distinguished contributions, and exceptional scientific innovation.

□ Key Highlights:

1. Categories of the Award:

- **Vigyan Ratna:** Lifetime achievement in any field of science and technology.
- **Vigyan Shri:** Distinguished contributions in any scientific field.
- **Vigyan Yuva-Shanti Swarup Bhatnagar Award:** For scientists below 45 years for exceptional contributions.
- **Vigyan Team Award:** For research teams of three or more scientists.

2. Lifetime Honour:

- Eminent astrophysicist **Jayant Vishnu Narlikar** was posthumously awarded the **Vigyan**

- Ratna** for lifetime contribution to astrophysics and popular science.
3. **Award Ceremony:**
 - The first RVP awards were presented by **President Droupadi Murmu** at **Rashtrapati Bhavan**.
 - The **Vigyan Team Award** was given to the **CSIR Aroma Mission** team.
 4. **Award Structure and Governance:**
 - The **Rashtriya Vigyan Puraskar Committee**, chaired by the **Principal Scientific Adviser (PSA)**, decides the awardees.
 - The list is forwarded to the **Ministry of Science and Technology** for final approval.
 - The structure mirrors the **Padma Awards model** but specifically honours contributions in **science, technology, and innovation**.
 5. **Objective:**
 - To honour Indian scientists and researchers for their **impactful and long-term contributions** across scientific domains.
 - To **inspire youth and promote a culture of innovation and research excellence**.

Hindi Summary (हिंदी सारांश):

भारत सरकार ने “**राष्ट्रीय विज्ञान पुरस्कार (Rashtriya Vigyan Puraskar - RVP)**” की घोषणा की है — यह विज्ञान एवं प्रौद्योगिकी के क्षेत्र में उत्कृष्ट उपलब्धियों को सम्मानित करने के लिए एक “**पद्म पुरस्कार शैली**” का राष्ट्रीय सम्मान है।

□ मुख्य बिंदु:

1. **पुरस्कार की श्रेणियाँ:**
 - **विज्ञान रत्न:** जीवनपर्यंत योगदान के लिए।
 - **विज्ञान श्री:** किसी भी वैज्ञानिक क्षेत्र में विशिष्ट योगदान के लिए।
 - **विज्ञान युवा:** 45 वर्ष से कम उम्र के युवा वैज्ञानिकों के लिए।
 - **विज्ञान टीम पुरस्कार:** तीन या उससे अधिक वैज्ञानिकों की टीम को संयुक्त शोध उपलब्धियों के लिए।
2. **जीवनपर्यंत सम्मान:**
 - प्रसिद्ध भौतिक विज्ञानी **जयंत विष्णु नारलीकर** को मरणोपरांत **विज्ञान रत्न पुरस्कार** प्रदान किया गया।
3. **सम्मान समारोह:**
 - पहला पुरस्कार वितरण **राष्ट्रपति भवन** में **राष्ट्रपति द्रौपदी मुर्मू** द्वारा किया गया।
 - **सीएसआईआर अरोमा मिशन टीम (CSIR Aroma Mission)** को **विज्ञान टीम पुरस्कार** मिला।
4. **संरचना और संचालन:**
 - पुरस्कार का चयन **प्रधान वैज्ञानिक सलाहकार (PSA)** की अध्यक्षता वाली समिति द्वारा किया गया।
 - अंतिम अनुशंसा **विज्ञान एवं प्रौद्योगिकी मंत्रालय** को भेजी जाती है।
 - इसका मॉडल **पद्म पुरस्कारों** की तरह है, लेकिन विशेष रूप से **विज्ञान और नवाचार क्षेत्र** के लिए समर्पित है।
5. **उद्देश्य:**
 - भारतीय वैज्ञानिकों के **दीर्घकालिक योगदान** और **वैज्ञानिक उत्कृष्टता** को सम्मानित करना।
 - युवाओं को **नवाचार और अनुसंधान संस्कृति** के लिए प्रेरित करना।

Key Points for Exam Notes:

- **Award Name:** Rashtriya Vigyan Puraskar (RVP)
- **Introduced By:** Ministry of Science and Technology
- **First Edition:** 2024
- **Top Honour:** Vigyan Ratna (Lifetime Achievement)
- **Governing Body:** Principal Scientific Adviser-led RVP Committee
- **Significance:** Indian equivalent of Padma Awards for Science
- **Aim:** To promote innovation, recognize excellence, and build a culture of scientific research.
- **First Vigyan Ratna Awardee:** Jayant Vishnu Narlikar (Posthumous)
- **Team Award:** CSIR Aroma Mission
- **GS Relevance:**

- **GS Paper 3:** Achievements of Indians in Science & Technology, Research and Innovation.
- **GS Paper 2:** Governance and Institutional Frameworks for Science Promotion.

Pakistan must end rights violations in occupied areas: India

Press Trust of India

UNITED NATIONS

Asserting that democracy is an “alien” concept for Pakistan, India has called upon Islamabad to end grave human rights violations in territories under its illegal occupation, where the population is in “open revolt” against military occupation, repression, brutality and exploitation.

Responding to references made by Pakistan’s envoy at the U.N. Security Council’s open debate on “The United Nations Organisation: Looking into the future” on Friday, India’s Permanent Representative to the UN, Ambassador Parvathaneni Harish, said, “The people of Jammu and Kashmir exercise their fundamental rights in accordance with India’s time-tested democratic traditions and constitutional framework.”

“We, of course, know that these are concepts alien to Pakistan,” Mr. Harish said. The envoy reiterated that J&K “has been, is, and will always be” an integral and inalienable part of India.

“We call upon Pakistan to end the grave and ongoing human rights violations in the areas illegally occupied by it, where the popu-

Indian envoy says that the Security Council architecture no longer reflects contemporary geopolitical realities

lation is in open revolt against Pakistan’s military occupation, repression, brutality and illegal exploitation of resources,” he said. He added that the 80-year-old Security Council architecture no longer reflects contemporary geopolitical realities.

“An outdated Council architecture that mirrors the geopolitical realities of 1945 is not equipped to handle the challenges of 2025,” he said, calling for expansion in both permanent and non-permanent categories through “time-bound” and “text-based negotiations”.

He underlined that the Global South must have a greater voice in global decision-making”.

Mr. Harish further emphasised the need to revitalise the General Assembly as the UN’s principal deliberative and policy-making body, enhancing coordination with other organs, particularly the Security Council, to realise the purposes and principles of the UN Charter.

GS Paper Mapping:

GS Paper 2 – International Relations (India and Its Neighbourhood; United Nations; Human Rights Issues)
GS Paper 3 – Security (Territorial Integrity and Strategic Interests)

English Summary:

At the **United Nations Security Council's open debate** on "The United Nations Organisation: Looking into the Future", **India** strongly criticised **Pakistan** for its human rights violations in **Pakistan-occupied territories**, asserting that **democracy is an "alien concept"** for Islamabad.

India's **Permanent Representative to the UN, Ambassador Parvathaneni Harish**, stated that the **people of Jammu & Kashmir (J&K)** exercise their rights within India's **democratic and constitutional framework**, unlike the situation in Pakistan-occupied areas where residents live under **military repression and exploitation**.

IN India's Key Points:

- 1. Violation of Rights:**
 - India accused Pakistan of severe and ongoing **human rights violations**, including repression, brutality, and illegal resource exploitation in **Pakistan-occupied territories (PoK and Gilgit-Baltistan)**.
 - The local population, according to India, is in **"open revolt"** against the military occupation.
 - 2. Status of Jammu & Kashmir:**
 - India reaffirmed that **"Jammu and Kashmir has been, is, and will always be an integral and inalienable part of India."**
 - This reiteration was a firm diplomatic response to Pakistan's repeated attempts to internationalise the Kashmir issue.
 - 3. UN Reforms & Global South Representation:**
 - Ambassador Harish emphasised that the **UN Security Council (UNSC)** architecture, designed in **1945**, is **outdated** and does not reflect **contemporary geopolitical realities of 2025**.
 - India called for **expansion of both permanent and non-permanent seats**, promoting a greater voice for the **Global South** in global decision-making.
 - 4. Reform of the UN System:**
 - India urged revitalising the **UN General Assembly** as the world's **principal policy-making body** to ensure fair representation and balance of power.
 - India's remarks aligned with its long-standing advocacy for **multilateralism and institutional reform** to reflect the changing world order.
-

Hindi Summary (हिंदी सारांश):

संयुक्त राष्ट्र सुरक्षा परिषद की बैठक **"The United Nations Organisation: Looking into the Future"** में भारत ने **पाकिस्तान** द्वारा कब्जे वाले क्षेत्रों (PoK) में हो रहे **मानवाधिकार हनन** की कड़ी निंदा की।

भारत के संयुक्त राष्ट्र में स्थायी प्रतिनिधि, राजदूत पर्वथनेनी हरीश ने कहा कि **जम्मू-कश्मीर के लोग भारत के संवैधानिक ढांचे और लोकतांत्रिक परंपराओं के अंतर्गत अपने मौलिक अधिकारों का प्रयोग करते हैं**, जबकि पाकिस्तान-अधिकृत क्षेत्रों में जनता **सैन्य दमन, शोषण और संसाधनों के अवैध दोहन** से पीड़ित है।

IN भारत के प्रमुख बिंदु:

- 1. मानवाधिकार उल्लंघन:**
 - पाकिस्तान-अधिकृत कश्मीर (PoK) और गिलगित-बाल्टिस्तान में **सैन्य कब्जा, दमन और शोषण** जारी है।
 - भारत ने कहा कि वहाँ की जनता **"सैन्य शासन के खिलाफ खुले विद्रोह"** में है।
- 2. जम्मू-कश्मीर की स्थिति:**
 - भारत ने पुनः दोहराया कि **"जम्मू-कश्मीर भारत का अभिन्न और अविभाज्य हिस्सा है, और हमेशा रहेगा।"**
- 3. संयुक्त राष्ट्र सुधार की मांग:**
 - भारत ने कहा कि **सुरक्षा परिषद की वर्तमान संरचना (1945 की)** अब 2025 की भू-राजनीतिक वास्तविकताओं के अनुरूप नहीं है।

- भारत ने स्थायी और अस्थायी दोनों श्रेणियों में सदस्यता विस्तार तथा ग्लोबल साउथ को अधिक प्रतिनिधित्व देने की मांग की।
 - 4. **संयुक्त राष्ट्र प्रणाली में सुधार:**
 - भारत ने संयुक्त राष्ट्र महासभा को सशक्त बनाने की आवश्यकता पर बल दिया ताकि वह एक मुख्य नीति निर्धारण संस्था के रूप में कार्य कर सके।
 - भारत का दृष्टिकोण बहुपक्षवाद (multilateralism) और वैश्विक संस्थागत सुधारों पर आधारित है।
-

Key Points for Exam Notes:

- **Topic:** India–Pakistan Relations & UN Reforms
- **Representative:** Parvathaneni Harish, India's Permanent Representative to the UN
- **India's Position:**
 - Pakistan's human rights violations in occupied areas condemned.
 - Jammu & Kashmir an integral part of India.
 - UNSC needs reform for contemporary realities.
 - Global South must have greater voice.
- **UN Reform Advocacy:** Expansion in permanent & non-permanent categories; strengthen UNGA.
- **GS Relevance:**
 - **GS Paper 2:** International Relations, India and UN, India–Pakistan Issues, Global Governance.
 - **GS Paper 3:** Internal Security & Territorial Integrity.

Centre plans to safeguard traditional media amid digital disruption: Minister

The Hindu Bureau
NEW DELHI

The Centre will take initiatives for the protection of conventional media against the disruption caused by digital media, Union Information and Broadcasting Minister Ashwini Vaishnaw said on Saturday.

The government is considering reforms in the radio, television, and direct-to-home sectors to create more conducive conditions for their growth, Mr. Vaishnaw said. Guidelines for Television Rating Points (TRP) agencies were being formulated to address existing distortions.

The first round of public consultations had already been completed in this regard, and further rounds of consultations were expected to follow, the Minister said.

The government's advertisement rates may also



Ashwini Vaishnaw

be rationalised to ensure a level playing field for conventional media, including print media, sources said.

The Press Information Bureau (PIB) had intensified its outreach efforts, issuing backgrounders and research-based documents on key topics regularly to strengthen public dissemination of information about government policies, programmes, and achievements, Mr. Vaishnaw said, speaking to reporters.

The Registrar of New-

spapers for India, the PIB, and the Central Bureau of Communication would soon be integrated for efficient coordination and convergence across media outreach and regulatory functions. A chatbot on online content flagged as fake by the PIB's Fact Check Unit was being developed. Efforts were under way to introduce software to enable swift authenticity verification of videos circulating on social media platforms, Mr. Vaishnaw said.

'Creator economy'

The government is focusing on strengthening the "creator economy", the Minister said, adding that initiatives such as WAVES Bazaar and the new Indian Institute of Creative Technology in Mumbai are driving global engagement and is offering industry-oriented courses of three months to three years.

Reforms)

GS Paper 3 – Science and Technology (Impact of Digital Media, Cyber Regulations, Information Ethics)

English Summary:

The **Government of India** plans to introduce a comprehensive policy framework to **protect and promote traditional media**—such as **radio, television, and print**—amid the growing **disruption** caused by digital platforms.

Union Minister for Information and Broadcasting **Ashwini Vaishnaw** announced several reform measures to ensure a **level playing field between conventional and digital media**, while addressing issues like misinformation and authenticity of content.

Key Highlights:

1. Reforms in Traditional Media:

- The government is working on reforms for the **radio, television, and direct-to-home (DTH)** sectors to improve their growth environment.
- **Television Rating Points (TRP)** guidelines are being revised to remove **distortions** and ensure fair evaluation of TV viewership.

2. Public Consultations:

- The **first round of stakeholder consultations** has been completed, and **further consultations** are planned to refine the reforms.

3. Ad Reforms and Media Coordination:

- The **government's advertisement policies** will be **rationalised** to create a **fair competitive environment** for traditional print and broadcast media.
- Coordination among the **Press Information Bureau (PIB)**, **Central Bureau of Communication (CBC)**, and the **Registrar of Newspapers for India (RNI)** will be strengthened.

4. Fake News & Digital Verification:

- A **chatbot** is being developed by the **PIB's Fact Check Unit** to flag fake online content and verify authenticity in real-time.
- The government plans to introduce **software-based authenticity verification tools** for detecting **deepfakes** and manipulated social media content.

5. Focus on Creator Economy:

- The government aims to strengthen the **"creator economy"**, which focuses on supporting digital creators, artists, and content producers.
- Initiatives like **WAVES Bazaar** and the **Indian Institute of Creative Technology (IICT)**, **Mumbai** will offer **industry-oriented digital media courses** to enhance employment and innovation in the sector.

Hindi Summary (हिंदी सारांश):

भारत सरकार ने घोषणा की है कि वह **डिजिटल मीडिया से उत्पन्न व्यवधान (digital disruption)** के बीच **पारंपरिक मीडिया (traditional media)** — जैसे **रेडियो, टेलीविजन और प्रिंट मीडिया** — की सुरक्षा और विकास के लिए व्यापक नीति तैयार कर रही है।

सूचना एवं प्रसारण मंत्री **अश्विनी वैष्णव** ने कहा कि सरकार पारंपरिक और डिजिटल मीडिया के बीच **समान अवसर (level playing field)** सुनिश्चित करने के लिए कई सुधारात्मक कदम उठा रही है।

मुख्य बिंदु:

1. पारंपरिक मीडिया में सुधार:

- **रेडियो, टेलीविजन और डीटीएच सेक्टर** में सुधार लाकर विकास को बढ़ावा देने की योजना है।
- **टीआरपी (TRP)** एजेंसियों के लिए नई दिशानिर्देश तैयार किए जा रहे हैं ताकि **मापन में विकृतियों (distortions)** को दूर किया जा सके।

2. जन परामर्श प्रक्रिया:

- नीति निर्माण के लिए **पहला दौर पूरा** हो चुका है और आगे **अधिक परामर्श** किए जाएंगे।

3. विज्ञापन नीति और समन्वय:

- सरकार की विज्ञापन नीतियाँ संशोधित की जाएंगी ताकि पारंपरिक मीडिया को समान अवसर मिल सके।
 - प्रेस इंफॉर्मेशन ब्यूरो (PIB), सेंट्रल ब्यूरो ऑफ कम्युनिकेशन (CBC) और रजिस्ट्रार ऑफ न्यूज़पेपर्स (RNI) के बीच समन्वय को मजबूत किया जाएगा।
4. फेक न्यूज़ और डिजिटल प्रमाणीकरण:
- PIB की फैक्ट चेक यूनिट एक चैटबॉट विकसित कर रही है जो ऑनलाइन फेक सामग्री को पहचान सकेगा।
 - सरकार डीपफेक और झूठे वीडियो की सत्यता की जांच के लिए सॉफ्टवेयर टूल्स भी ला रही है।
5. 'क्रिएटर इकॉनमी' पर ध्यान:
- सरकार डिजिटल कंटेंट क्रिएटर्स और कलाकारों को प्रोत्साहन देने पर बल दे रही है।
 - WAVES Bazaar और इंडियन इंस्टीट्यूट ऑफ क्रिएटिव टेक्नोलॉजी (मुंबई) जैसी पहलें डिजिटल मीडिया में रोजगार और नवाचार को बढ़ावा देंगी।

Key Points for Exam Notes:

- **Topic:** Media Policy Reforms & Digital Regulation in India
- **Announced by:** Ashwini Vaishnaw, Minister for Information & Broadcasting
- **Key Bodies:** PIB, CBC, RNI, Fact Check Unit
- **Initiatives:** TRP Reforms, Rationalised Ad Policy, Fake News Chatbot, Creator Economy Programmes
- **Significance:** Balancing digital growth with traditional media protection and curbing misinformation.
- **GS Relevance:**
 - **GS Paper 2:** Government Policies, Regulatory Mechanisms, Freedom of Media
 - **GS Paper 3:** Technology, Cybersecurity, Digital Governance

Have 'green' crackers brought down pollution?

Is 'reduced emission fireworks' a better term to describe such 'green' crackers? Who developed these fireworks?

Jacob Koshy

The story so far:

In the run-up to Deepavali, the Supreme Court legalised the sale of "green" crackers, in a bid to balance three competing interests: the "sentiments" of the people during the festive season; the pollution caused due to the burning of firecrackers; and livelihood concerns of those employed in the firecracker industry. The largely small scale informal sector has been hit by the cracker ban in the National Capital Region since 2018.

How are 'green' crackers made?

In 2018, the Nagpur-based CSIR-National Environmental and Engineering Research Institute (NEERI) initiated the development of "green" crackers that reportedly cut particulate emissions by a minimum of 30%, and sometimes up to 80%, while maintaining brightness, safety, and shelf-life. This was largely achieved by three major chemical-formulation changes: the use of additives such as 'zeolite'; water-releasing molecules such as boron-based reagents to act as dust suppressants; and the addition of metallic composites to enhance combustion temperature and improve combustion efficiency. Traditionally, firecrackers have been made with barium nitrate, antimony and a range of metals that, over the years, have been linked to respiratory diseases and even cancer.

The green avatar of the 'flower pot', one of the most popular fireworks, has a mixture of water and lime that is chemically stored in the

cracker. When lit, the effulgence also triggers water, and the moisture, its makers contend, wets the dust-and-smoke particles making it settle rather than becoming airborne. NEERI claims that tests in its labs have seen a reduction of nearly 30% in particulate matter and also reduced the release of sulphur dioxide as well as nitrous oxide emissions when these flower pots are burnt. Green sparklers use 32% potassium nitrate, 40% aluminium powder, 1% aluminium chips, and 17% "proprietary additives" to reduce PM10 and PM2.5 to 30%.

Similarly, a new formulation of a 'bomb' named 'SWAS' uses 72% of a "proprietary additive," 16% potassium nitrate oxidiser, 9% aluminium powder, and 3% sulphur to reduce PM10 and PM2.5. Since these crackers were developed, there have been demonstrations by NEERI at major fireworks manufacturing units such as Sivakasi in Tamil Nadu.

What has been the uptake?

NEERI, according to the Commission for Air Quality Management (Delhi-NCR), had also developed a Standard Operating Procedure (SOP) to register green cracker manufacturers and to provide technology transfer of the formulations for manufacturing such crackers. The list of green crackers have been put on the website of NEERI for registration and grant for individual products. It would require the manufacturer to get multiple registrations from NEERI based on the number of products. Only manufacturers with an explosive licence from the Petroleum and Explosives Safety Organisation (PESO) would be granted registration by NEERI. This year, there were nearly 1,500 applicants who procured a licence to manufacture these crackers with the vast majority of them from Tamil Nadu, followed by West Bengal. The term "green" cracker, strictly speaking, is a misnomer as green usually refers to zero-emission or smoke products. An electric vehicle, for instance is 'green', as it is powered by a battery with no carbon emissions. In an academic article from 2023, scientists from NEERI when evaluating the results from such crackers referred to them as 'Reduced Emission Fireworks', a more accurate term. However, the SC order refers to these products as "green".

Are green crackers less polluting?

The stated claim of the makers is that they reduce particulate matter pollution by 30%. However, these are numbers computed by the lab themselves and have not been verified in real-world conditions. The Supreme Court in its order noted that relative to 2018 and 2024, there was "not much improvement" in the overall air quality. However, it used this to conclude that, therefore, permitting green crackers for Deepavali, though with restrictions on their use, could not make the deteriorating air quality much worse than it already was. On October 20 and 21, air quality deteriorated to 'very poor', according to readings from sensors through the NCR. In the days leading up to the festival, the air quality was already on a decline. This is not unusual in mid-October, given dipping temperatures and a drop in wind speed. Several sensors recorded particulate matter concentrations well over 1,000 microgram/cubic metre. A contributor to this was also stubble burning in Punjab but there is no official or independent scientific measurement available yet of their relative contribution.

GS Paper Mapping:

GS Paper 3 – Environment & Ecology (Pollution Control, Green Technology, CSIR Initiatives)

GS Paper 2 – Governance (Judicial Interventions in Environmental Protection, SC Directives)

English Summary:

In the run-up to **Deepavali**, the **Supreme Court** of India allowed the **use of “green crackers”**, balancing three concerns — public sentiment, air pollution, and the livelihood of workers in the firecracker industry.

These “green” or **reduced-emission fireworks** were developed by **CSIR–National Environmental and Engineering Research Institute (NEERI)** in **2018**, with the claim that they **reduce particulate emissions by 30–80%** while maintaining brightness, safety, and shelf life.

Development of Green Crackers:

- Developed by: **CSIR–NEERI, Nagpur**.
- Objective: Reduce emissions of **PM2.5 and PM10** and other toxic elements such as sulphur dioxide (SO₂) and oxides of nitrogen (NO_x).
- Method:
 - Replacement of **barium nitrate** with **zeolite-based** and **boron-based reagents** as suppressants.
 - Use of **water-releasing molecules** to settle dust.
 - Addition of metallic composites to improve combustion efficiency.

Examples:

1. **‘SAFAL’ (Safe Water Releaser)**: 40% aluminium powder, 17% additives → reduces PM10 & PM2.5 by up to 30%.
 2. **‘SWAS’ (Safe Water Releaser System)**: 16% potassium nitrate, 9% aluminium powder → reduces PM10 & PM2.5 up to 30%.
 3. **‘STAR’ Series**: Uses minimal sulphur and proprietary additives to suppress smoke.
-

NEERI’s Claim:

- Green crackers reduce **particulate matter by ~30%** compared to conventional ones.
 - However, these are **lab-based results**, not verified in real-world field conditions.
 - According to NEERI, the **“reduced emission fireworks (REF)”** is a more technically accurate term than “green crackers.”
-

Supreme Court Observations (2024):

- Despite restrictions, **air quality in NCR showed “no significant improvement”** between 2018 and 2024.
 - **AQI readings** remained in the “very poor” range during the festive period.
 - SC concluded that even though green crackers exist, their limited use **could not offset stubble burning, weather patterns, or wind stagnation** — the main contributors to poor air quality.
-

Implementation Challenges:

- The **Commission for Air Quality Management (CAQM)** created an **SOP for licensing manufacturers** through NEERI and the **Petroleum and Explosives Safety Organisation (PESO)**.
 - As of 2024, around **1,500 licensed manufacturers** existed (mostly in Tamil Nadu’s Sivakasi region).
 - **Counterfeit products** claiming to be “green” remain a major issue.
-

Critical Analysis:

- Green crackers represent a **technological intervention**, but **their actual environmental benefit remains limited** due to:
 - Weak enforcement of bans on non-green crackers.
 - Inadequate public awareness.
 - Other dominant pollution sources (stubble burning, vehicular emissions).

- Environmental experts argue that calling them “green” is **misleading**, preferring the term “**Reduced Emission Fireworks**.”

Hindi Summary (हिंदी सारांश):

दीवाली से पहले सुप्रीम कोर्ट ने “ग्रीन क्रैकर्स” के उपयोग की अनुमति दी ताकि जनभावना, वायु प्रदूषण नियंत्रण और पटाखा उद्योग से जुड़े श्रमिकों की आजीविका — तीनों के बीच संतुलन बनाया जा सके।

ग्रीन क्रैकर्स को CSIR-NEERI (नागपुर) ने 2018 में विकसित किया था, जिनसे दावा किया गया कि वे 30% से 80% तक पार्टिकुलेट प्रदूषण कम करते हैं।

विकास और संरचना:

- मुख्य संस्था: CSIR-NEERI
- उद्देश्य: PM2.5, PM10, SO₂ और NO_x जैसे प्रदूषकों को कम करना।
- प्रमुख परिवर्तन:
 - बेरियम नाइट्रेट के स्थान पर जिओलाइट और बोरॉन यौगिक का उपयोग।
 - पानी छोड़ने वाले अणु (water-releasing molecules) का प्रयोग ताकि धूल नीचे बैठे।
 - मेटलिक कंपोजिट्स से दहन दक्षता बढ़ाई गई।

मुख्य प्रकार:

- SAFAL: 40% एल्युमिनियम पाउडर और 17% योजक — PM10/PM2.5 में 30% कमी।
- SWAS: 16% पोटैशियम नाइट्रेट, 9% एल्युमिनियम — PM में 30% तक कमी।

NEERI का दावा:

- 30% तक पार्टिकुलेट प्रदूषण में कमी।
- लेकिन ये परिणाम प्रयोगशाला स्तर के हैं, जमीनी स्तर पर इनकी पुष्टि नहीं हुई है।

सुप्रीम कोर्ट के अवलोकन (2024):

- 2018 से 2024 तक वायु गुणवत्ता में कोई बड़ा सुधार नहीं हुआ।
- NCR क्षेत्र में AQI “very poor” श्रेणी में ही रहा।
- मुख्य कारण – पराली जलाना, ठंडी हवाएँ और हवा की धीमी गति।

कार्यान्वयन स्थिति:

- CAQM और PESO ने पंजीकरण प्रणाली बनाई।
- लगभग 1,500 लाइसेंस प्राप्त निर्माता (मुख्यतः सिवाकासी, तमिलनाडु)।
- नकली ग्रीन पटाखों की समस्या अभी भी बनी हुई है।

Key Points for Exam Notes:

- Developed by: CSIR-NEERI, Nagpur (2018).
- Scientific Basis: Reduced emission fireworks (REF).
- Emission Reduction: ~30% (lab data).
- Supervising Agencies: CAQM, PESO, NEERI.
- Supreme Court's View: No significant real-world improvement in AQI.
- Main Issue: Implementation gap, enforcement, and parallel pollution sources.
- GS Relevance:
 - GS Paper 3: Pollution Control, Environmental Technology, Air Quality.
 - GS Paper 2: Role of Judiciary in Environmental Governance.

Google's AI for drug discovery is a win for scientific research

The C2S-Scale model was trained on a large dataset of real-world patients and cell-line data, based on which it suggested a drug called silmitasertib could be used to improve the immune system's ability to identify cancerous tumours

Jacob P Koshy

Google's launch of a suite of artificial intelligence (AI) tools, which its researchers reported to be successful at not only suggested a new drug combination for cancer therapy but even stood up to early tests in the laboratory, is a signal that research scientists ought to be integrating AI into the process of scientific discovery.

Built on the Gemma family of open models, the Cell2Sentence-Scale 27B (C2S-Scale) is a 27-billion-parameter foundation model designed to "understand" the language of individual cells.

"This announcement marks a milestone for AI in science," Shekoofeh Azizi and Brian Perozzi, staff scientists at Google DeepMind and Google Research, respectively, wrote in a post accompanying the announcement.

"C2S-Scale generated a novel hypothesis about cancer cellular behaviour and we have since confirmed its prediction with experimental validation in living cells. This discovery reveals a promising new pathway for developing therapies to fight cancer," they added.

The C2S-Scale model was trained on a large dataset of real-world patients and cell-line data, based on which it suggested a drug called silmitasertib could be used to improve the immune system's ability to identify cancerous tumours when they were

Cell whisperer

The C2S-Scale model was trained on a large dataset of real-world patients and cell-line data

- Google's new AI model C2S-Scale proposed a potential cancer drug combination that scientists validated in lab tests
- Built on the Gemma family of open models, C2S-Scale is designed to interpret the molecular 'language' of individual cells
- C2S-Scale suggested a new use for silmitasertib, improving immune detection of early-stage cancerous tumours
- Experts noted the finding was impressive but not revolutionary, as trained biologists could have reached similar insights
- C2S-Scale's developers said AI models can learn biological rules autonomously, through reinforcement of successes and penalties for mistakes



The novelty of Google's effort that it scanned the vast cancer biology literature to suggest a novel use for a drug candidate.
DAVID S. GOODSELL

- Researchers view such advances as signs that AI could soon tackle deeper scientific and mathematical problems

nascent. To be sure, silmitasertib (CX-4945) is currently in several clinical trials to treat multiple myeloma, kidney cancer, medulloblastoma, and advanced solid tumours. In January 2017, the US Food and Drug Administration granted it orphan drug status for advanced cholangiocarcinoma.

However, the novelty of Google's effort was not in (re)discovering the drug but that it had scanned the vast cancer biology literature to suggest a novel use for a drug candidate. Pharmaceutical companies in their usual course spend billions of dollars and employ highly trained personnel to reveal similar insights.

"It's a nice result and was a well-chosen problem to test the capabilities of an LLM [large language model]," Sunil Laxman, systems biologist at the Institute for Stem Cell Science

and Regenerative Medicine, Bengaluru, told *The Hindu*.

"This would, in the usual course, have taken a focussed team of dedicated researchers several months to suggest such a use of the drug."

Dr. Laxman however underlined that the model hadn't suggested something that couldn't have occurred to a trained biologist nor had discovered something new about cancer biology.

"It's very good. Not great. The average laboratory in India will not have access to a vast library of chemical compounds where they can be tested. This one had, and while it has certainly shortened the time [in this case] for a potential discovery, it isn't a path-breaking discovery."

LLMs are at the core of AI and are trained on human-annotated data to understand human language

and solve problems.

Drs. Azizi and Perozzi have contended that their results demonstrate that it's possible to create LLMs that don't have to be trained on the rules of biological systems.

Instead, they wrote, the models can be encouraged to figure the rules out just by having their successes 'rewarded' and failures 'punished'. This is how some of the most powerful chess-playing LLMs were trained.

Indian Institute of Science, Bengaluru, mathematics professor Siddhartha Gadgil interpreted the findings as significant and reckoned that the best AI models in mathematics were today at the level of a "skilled mathematician but not at genius-human levels".

"We can't say when an AI model will solve the Riemann hypothesis but there's no reason to sup-

pose it never can. Already there are several initiatives and even companies that are tackling unsolved mathematical problems and they do come up with novel hypotheses."

Dr. Gadgil cited the International Mathematical Olympiad 2025, where OpenAI, the maker of ChatGPT, said an "experimental reasoning model" had figured out answers to the questions, which, if it were a human, would have won it a gold medal. The model followed the same time limits as human participants and hadn't specifically been trained for the contest.

This said, the Olympiad's problems aren't representative examples of the problems professional mathematicians work on; they're intended for talented high-schoolers and constitute a gold standard test of mathematical talent. The Riemann hypothesis on the other hand is a problem many mathematicians are working on. It's a statement about the nature of prime numbers whose proof has eluded mathematicians for over a century.

Prof. Gadgil, who embraces LLM tools in his own research, said his field is "still divided" on incorporating them.

According to him, there were several good models that "showed no signs of plateauing and had a lot of latent capabilities that still weren't fully explored", and therefore ought to be encouraged as tools a working researcher could incorporate.

GS Paper Mapping:

GS Paper 3 – Science and Technology (AI Applications, Biotechnology, Drug Discovery, Research & Innovation)

GS Paper 2 – Health (Public Health, Medical Research, Technology Integration in Healthcare)

Google has launched a suite of **artificial intelligence (AI) tools** that are being hailed as a **major milestone in scientific research and drug discovery**.

The **C2S-Scale model**, developed by **Google DeepMind** and **Google Research**, is a **27-billion parameter foundation model** designed to understand the **cellular language of biological systems**. It has successfully generated new hypotheses about **cancer cell behaviour**, validated in laboratory tests.

Key Features of C2S-Scale Model:

- Foundation Model:**
 - Built on **Gemma**, Google's family of open AI models.
 - C2S-Scale is trained on **real-world datasets** of patients and **cell-line data** to interpret complex **molecular and cellular signals**.
- New Discovery:**
 - The AI model suggested a new **therapeutic use** for a drug called **Silmitasertib (CX-4945)** — originally approved for rare bile duct cancer — to enhance the **immune system's ability to identify and attack early-stage cancerous tumours**.
- Scientific Validation:**
 - Early **lab experiments confirmed** C2S-Scale's predictions on cellular behaviour.
 - Researchers viewed this as proof that **AI can autonomously generate viable scientific hypotheses**.
- Drug Development Potential:**
 - This discovery could help **repurpose existing drugs**, cutting costs and time for new drug development.
 - Pharmaceutical companies could use such AI models to **analyze vast biological datasets**, reducing human trial errors.

Experts' Views:

- Dr. Laxman, Bengaluru:**
 - The AI didn't "invent" the drug but **rediscovered** its potential by analyzing vast biological literature — a significant **time-saving innovation**.
- Dr. Aziz and Perozzi (DeepMind):**
 - AI models can "learn" biological rules through **reinforcement learning** — rewarding successful predictions and penalizing errors, similar to how **AI learned to play chess and Go**.
- Dr. Gadgil, Indian Institute of Mathematical Sciences:**
 - AI's progress in drug discovery reflects its potential to **solve unsolved mathematical and scientific problems**.

Significance of the Breakthrough:

- The integration of **AI with life sciences** marks a **new paradigm in scientific research**.
- The approach can be applied to **personalised medicine, cancer research, and rare disease treatment**.
- Demonstrates AI's ability to **formulate hypotheses** rather than just analyze data — moving towards **"experimental reasoning models."**

Hindi Summary (हिंदी सारांश):

गूगल ने **कृत्रिम बुद्धिमत्ता (AI)** आधारित नए उपकरणों का सेट लॉन्च किया है, जो **वैज्ञानिक अनुसंधान और दवा खोज (drug discovery)** के क्षेत्र में एक **बड़ा परिवर्तन** माना जा रहा है।

इसका मुख्य मॉडल **C2S-Scale** है — जो **27 अरब पैरामीटर** वाला एक **फाउंडेशन मॉडल** है, जिसे मानव कोशिकाओं के **"भाषाई व्यवहार" (language of cells)** को समझने के लिए डिज़ाइन किया गया है।

मुख्य विशेषताएँ:

- फाउंडेशन मॉडल:**
 - यह गूगल के **Gemma मॉडल परिवार** पर आधारित है।

- इसे **वास्तविक रोगी और सेल-लाइन डेटा** पर प्रशिक्षित किया गया है ताकि कोशिकाओं के जटिल संकेतों को समझा जा सके।
- 2. **नई खोज:**
 - इस मॉडल ने दवा **Silmitasertib (CX-4945)** के नए उपयोग का सुझाव दिया — जो मूल रूप से **bile duct cancer** के लिए अनुमोदित थी — ताकि **प्रतिरक्षा तंत्र (immune system)** को **कैंसर कोशिकाओं की पहचान और नष्ट करने की क्षमता** बढ़ाई जा सके।
- 3. **वैज्ञानिक पुष्टि:**
 - लैब परीक्षणों ने C2S-Scale की भविष्यवाणियों को सही पाया।
 - यह संकेत है कि AI अब केवल विश्लेषण नहीं, बल्कि **वैज्ञानिक परिकल्पनाएँ (scientific hypotheses)** भी तैयार कर सकता है।
- 4. **संभावित लाभ:**
 - यह तकनीक **मौजूदा दवाओं के पुनः उपयोग (drug repurposing)** में मदद कर सकती है, जिससे नई दवाओं के विकास में समय और लागत दोनों कम होंगे।
 - **फार्मास्यूटिकल कंपनियाँ** इसे **जैविक डेटा विश्लेषण** और **क्लिनिकल रिसर्च** में प्रयोग कर सकती हैं।

विशेषज्ञों की राय:

- **डॉ. लक्ष्मण (बेंगलुरु):**
 - यह दवा का “पुनः आविष्कार” है — जिससे वैज्ञानिकों का समय और संसाधन दोनों बच सकते हैं।
- **डॉ. पेरोज़ी (DeepMind):**
 - AI मॉडल्स “रिइनफोर्समेंट लर्निंग” के जरिए **सफलता और असफलता से सीखते हैं** — बिल्कुल जैसे AI ने **शतरंज और गो** खेलना सीखा।
- **डॉ. गाडगिल:**
 - यह मॉडल इस दिशा में संकेत है कि AI भविष्य में **वैज्ञानिक और गणितीय समस्याओं का समाधान** स्वयं खोज सकता है।

Key Points for Exam Notes:

- **Model Name:** C2S-Scale (Cell2Science-Scale)
- **Developed by:** Google DeepMind & Google Research
- **Built on:** Gemma model family
- **Dataset:** Real-world patient and cell-line data
- **Drug Suggested:** Silmitasertib (CX-4945) — immune-based cancer therapy
- **Significance:**
 - AI-based hypothesis generation
 - Drug repurposing
 - Boosts precision medicine research
 - Integrates biology and computation
- **GS Relevance:**
 - **GS Paper 3:** Science & Technology, Biotechnology, AI in Healthcare
 - **GS Paper 2:** Health, Policy Implications of Emerging Technologies

‘Samsung’s India R&D has emerged as a key global collaborator’

Mini Tejaswi
BENGALURU

Samsung’s India R&D facility based in Bengaluru, a site that had a humble beginning in 1996, has emerged as a critical collaborating partner globally for South Korean consumer electronics corporation.

“The centre has been making key contributions to wireless communications technology. It worked through various generations of communication technology, from the 2G to 3G transition, 3G to 4G transition, and currently, the 4G to 5G transition and beyond,” Mohan Rao Goli, MD, Samsung R&D Institute India-Bengaluru (SRI-B) told *The Hindu*.

Another huge wave of transition, the company working from Bengaluru R&D was on the transition from feature phone to smartphone technology. The 4G transition was also happening. So along with connectivity and cellular technologies, smartphone technologies also began to take shape. This then led to requirements for smartphone platforms. “So, our take on the Android, our take on the smartphone, our take on the Galaxy ecosystem created the transition from the feature phone to the smartphone,” Mr. Goli said.

Samsung is now witnessing yet another wave of transition with the advent of AI. “I think now we are witnessing another such kind of transition, smartphone to the AI phone or smartphone era



Mohan Rao Goli

to the AI era. With this, we are also playing a very important role with the Galaxy AI as a platform to create that AI phone transition to happen for the consumers.”

Mr. Goli said at the Bengaluru R&D Centre, either it is the wireless communications or the computer vision, system software, Internet of Things and AI and services.

Elaborating on the centre’s global contributions, he said the company believed in a collaborative approach and accordingly all its R&D centres across the world, including Suwon R&D centre, Seoul R&D center, Bangalore R&D centre, work together to provide meaningful contribution to all our Samsung Galaxy devices.

At this R&D centre, Samsung has a huge responsibility to understand the requirements of all consumers, including Indian consumers, and then, develop innovations. “For example, the Samsung wallet is part of our Galaxy devices. We prepared UPI as a payment service in the Samsung wallet itself, which is an Indian customisation,” he said.

GS Paper Mapping:

GS Paper 3 – Science & Technology (R&D, Innovation, AI, Digital Infrastructure)

GS Paper 2 – Governance (India–South Korea Relations, Technological Collaboration)

English Summary:

Samsung's India R&D Centre in Bengaluru, established in **1996**, has grown into a **critical global collaborator** for the South Korean tech giant, contributing significantly to **wireless communications, smartphone technologies, and artificial intelligence (AI)**.

Mohan Rao Goli, **Managing Director of Samsung R&D Institute India–Bengaluru (SRI-B)**, highlighted how the centre has evolved from early telecom research to driving innovations across **5G, AI, IoT, and system software**.

Evolution and Key Contributions:

1. Telecom Evolution:

- The Bengaluru R&D centre has contributed to all major **communication transitions — 2G to 3G, 3G to 4G, and now 4G to 5G**.
- It also played a pivotal role in developing **wireless communication technologies and cellular standards** for global Samsung devices.

2. Smartphone Revolution:

- The R&D team contributed to the **transition from feature phones to smartphones**, developing core technologies for **Android and Galaxy ecosystems**.
- The centre was instrumental in creating a seamless user experience across **Samsung Galaxy platforms**.

3. AI and Emerging Technologies:

- Samsung India R&D is now focusing on **AI-based phone transitions**, using **Galaxy AI** as a platform to integrate new intelligent features for consumers.
- Areas of work include **computer vision, system software, IoT (Internet of Things), and AI-powered services**.

4. Global Collaboration:

- The Bengaluru R&D centre works jointly with Samsung's **Suwon and Seoul (South Korea)** research centres to ensure innovation across all **Galaxy devices**.
- This collaboration promotes a **global-local model**, where India contributes both engineering expertise and consumer insights.

5. Localized Innovation:

- The centre has been developing **solutions tailored for Indian users**, such as **Samsung Wallet with UPI payment integration**, showcasing **"Indian customization for global products."**
-

Significance for India:

- Positions **India as a global R&D hub** for advanced technology development.
 - Strengthens **India–South Korea technology cooperation**.
 - Aligns with India's **Digital India and Make in India** initiatives by fostering indigenous innovation capacity.
 - Encourages India's **skilled workforce participation** in global product innovation.
-

Hindi Summary (हिंदी सारांश):

सैमसंग का भारत स्थित अनुसंधान एवं विकास केंद्र (R&D Centre), जो 1996 में बेंगलुरु में स्थापित हुआ था, अब दक्षिण कोरियाई उपभोक्ता इलेक्ट्रॉनिक्स कंपनी सैमसंग का वैश्विक अनुसंधान सहयोगी केंद्र बन चुका है।

मोहन राव गोली, प्रबंध निदेशक, सैमसंग R&D इंस्टिट्यूट इंडिया–बेंगलुरु (SRI-B) ने बताया कि यह केंद्र अब 2G से 5G, स्मार्टफोन तकनीक, और कृत्रिम बुद्धिमत्ता (AI) जैसे क्षेत्रों में वैश्विक नवाचार का नेतृत्व कर रहा है।

मुख्य योगदान:

1. संचार तकनीकी विकास:

- केंद्र ने 2G से 5G तक के सभी संक्रमणों में तकनीकी योगदान दिया है।
- इसने वैश्विक स्तर पर वायरलेस संचार और सेल्युलर तकनीक मानक विकसित करने में प्रमुख भूमिका निभाई।
- 2. **स्मार्टफोन क्रांति:**
 - बेंगलुरु टीम ने फीचर फोन से स्मार्टफोन में बदलाव को साकार किया।
 - एंड्रोइड और गैलेक्सी इकोसिस्टम के विकास में केंद्र की महत्वपूर्ण भूमिका रही।
- 3. **AI और उभरती तकनीकें:**
 - अब केंद्र AI आधारित “Galaxy AI” प्लेटफॉर्म पर काम कर रहा है ताकि स्मार्टफोन में बुद्धिमान फीचर्स शामिल किए जा सकें।
 - काम के प्रमुख क्षेत्र हैं — कंप्यूटर विज्ञान, सिस्टम सॉफ्टवेयर, IoT और AI सेवाएँ।
- 4. **वैश्विक सहयोग:**
 - बेंगलुरु R&D केंद्र, सैमसंग के सुवन और सियोल केंद्रों के साथ मिलकर काम करता है।
 - यह वैश्विक-स्थानीय सहयोग मॉडल (Global-Local Collaboration) का उदाहरण है।
- 5. **भारतीय नवाचार:**
 - केंद्र ने भारतीय उपभोक्ताओं की जरूरतों के अनुसार समाधान तैयार किए हैं, जैसे सैमसंग वॉलेट में UPI भुगतान सुविधा।
 - यह “भारत से वैश्विक उत्पादों का स्थानीयकरण (Indian customization for global innovation)” का प्रतीक है।

Key Points for Exam Notes:

- **Institution:** Samsung R&D Institute India-Bengaluru (SRI-B)
- **Head:** Mohan Rao Goli
- **Established:** 1996
- **Focus Areas:** Wireless Communication, Smartphones, 5G, IoT, AI, System Software
- **Contribution:** Transition from feature to smartphone, 4G-5G development, Galaxy AI innovation
- **Example of Indian Contribution:** Samsung Wallet with UPI integration
- **Significance:**
 - Boosts India's role as a global tech collaborator
 - Strengthens India-South Korea R&D partnership
 - Promotes Digital India and Make in India visions
- **GS Relevance:**
 - **GS Paper 3:** Science & Technology, Innovation, AI, R&D
 - **GS Paper 2:** International Relations (India-South Korea cooperation), Digital Governance

Trump's Asia return, East Timor's entry to mark ASEAN summit

Associated Press

KUALA LUMPUR

Southeast Asian Foreign Ministers held talks on Saturday ahead of a landmark ASEAN summit that will formally welcome East Timor as the bloc's 11th member and mark U.S. President Donald Trump's first trip to Asia since returning to the White House.

The meeting serves as a curtain-raiser for the annual Association of South-east Asian Nations (ASEAN) summit which starts on Sunday in Kuala Lumpur, followed by two days of high-level engagements with key partners, including China, Japan, India, Australia, Russia, South Korea and the U.S.

Leaders are expected to focus on regional security, economic resilience, and maritime disputes – with U.S. tariffs and shifting global trade patterns looming large over discussions.

“As the international landscape becomes increasingly dominated by contestation rather than consensus, division rather than dialogue, ASEAN finds itself at a crossroads,” Malaysian Foreign Minister



Donald Trump

Mohamad Hasan said.

Mr. Trump's trip marks his first ASEAN meeting since 2017 and his first journey to Asia in his second term. The last U.S. president to attend an ASEAN meeting was Joe Biden in 2022. Officials say Mr. Trump is expected to witness new U.S. trade deals, including with Malaysia. Mr. Trump is also expected to preside over the signing of an expanded ceasefire between Thailand and Cambodia.

This year's summit marks a milestone for ASEAN as it welcomes a new member for the first time in 26 years. East Timor, also known as Timor Leste, applied for membership in 2011. The last member to join ASEAN was Cambodia in 1999.

GS Paper Mapping:

GS Paper 2 – International Relations (ASEAN, Regional Groupings, India's Foreign Policy, U.S. Role in Indo-Pacific)
GS Paper 1 – Geography (ASEAN countries, regional integration in Southeast Asia)

English Summary:

The **ASEAN Summit 2025**, held in **Kuala Lumpur (Malaysia)**, will be significant for two major reasons —

1. **Formal admission of East Timor (Timor-Leste)** as ASEAN's **11th member**, and
 2. **U.S. President Donald Trump's first visit to Asia** in his second term.
-

Key Highlights:

1. **East Timor Joins ASEAN:**
 - East Timor, also known as **Timor-Leste**, will officially become the **11th member of ASEAN** — the first new addition in **26 years** (since Cambodia joined in 1999).
 - The country had applied for membership in **2011**, and its inclusion reflects ASEAN's policy of regional expansion and inclusivity.
 2. **ASEAN Summit 2025:**
 - Venue: **Kuala Lumpur, Malaysia**.
 - Leaders from **China, Japan, India, Australia, Russia, South Korea, and the U.S.** will participate.
 - Discussions will cover **regional security, economic resilience, maritime disputes**, and the impact of **global trade disruptions and U.S. tariffs**.
 3. **Trump's Asia Visit:**
 - Marks his **first ASEAN engagement since 2017** and his **first trip to Asia** in his second presidential term.
 - Trump is expected to announce **new trade deals** with several ASEAN nations, including **Malaysia**, and oversee the signing of an **expanded ceasefire between Thailand and Cambodia**.
 - His visit signals renewed **U.S. engagement in the Indo-Pacific** amid rising strategic competition with China.
 4. **Geopolitical Context:**
 - ASEAN is navigating a **complex geopolitical landscape**, marked by **U.S.-China rivalry**, maritime tensions in the **South China Sea**, and **supply chain realignments**.
 - The bloc aims to maintain its **"centrality" and unity** amidst growing polarization in the region.
-

Significance for India:

- India, as a **key dialogue partner**, participates in ASEAN-led frameworks such as the **East Asia Summit, ASEAN Regional Forum (ARF), and ADMM-Plus**.
 - Strengthening India-ASEAN ties aligns with **India's Act East Policy** and the **Indo-Pacific Vision**.
 - India's engagement at this summit could focus on **trade diversification, maritime cooperation, and regional connectivity projects (like the India-Myanmar-Thailand Trilateral Highway)**.
-

Hindi Summary (हिंदी सारांश):

कुआलालंपुर (मलेशिया) में आयोजित **आसियान शिखर सम्मेलन (ASEAN Summit 2025)** दो प्रमुख कारणों से ऐतिहासिक माना जा रहा है —

1. **ईस्ट तिमोर (टिमोर-लेस्ते)** का आसियान का **11वाँ सदस्य** बनना, और
 2. **अमेरिकी राष्ट्रपति डोनाल्ड ट्रंप** की एशिया में वापसी।
-

मुख्य बिंदु:

1. **ईस्ट तिमोर की सदस्यता:**
 - ईस्ट तिमोर, जिसे **टिमोर-लेस्ते** भी कहा जाता है, 26 वर्षों बाद आसियान का नया सदस्य बना।

- इसने 2011 में आवेदन किया था, और अब यह 1999 में कंबोडिया के बाद जुड़ने वाला पहला नया देश है।
- 2. **आसियान सम्मेलन (ASEAN Summit 2025):**
 - स्थान: कुआलालंपुर, मलेशिया।
 - प्रमुख सहभागी: भारत, चीन, जापान, अमेरिका, ऑस्ट्रेलिया, रूस, दक्षिण कोरिया।
 - चर्चा के प्रमुख विषय: क्षेत्रीय सुरक्षा, आर्थिक स्थिरता, समुद्री विवाद, और वैश्विक व्यापार पैटर्न में परिवर्तन।
- 3. **ट्रंप की एशिया यात्रा:**
 - यह ट्रंप की 2017 के बाद पहली आसियान बैठक है।
 - वे मलेशिया सहित कई देशों के साथ नए व्यापार समझौते घोषित कर सकते हैं।
 - साथ ही, थाईलैंड-कंबोडिया के बीच विस्तारित युद्धविराम समझौते पर भी हस्ताक्षर होंगे।
 - उनकी यह यात्रा चीन के प्रभाव को संतुलित करने के लिए अमेरिका की “Indo-Pacific पुनःसक्रियता” को दर्शाती है।
- 4. **भू-राजनीतिक परिप्रेक्ष्य:**
 - आसियान वर्तमान में अमेरिका-चीन प्रतिद्वंद्विता, दक्षिण चीन सागर विवाद, और सप्लाई चेन पुनर्संरचना जैसी चुनौतियों का सामना कर रहा है।
 - इसका लक्ष्य है क्षेत्रीय एकता बनाए रखना और “आसियान केंद्रीयता” को सुदृढ़ करना।

भारत के लिए महत्व:

- भारत, आसियान का संवाद भागीदार (Dialogue Partner) है और East Asia Summit, ASEAN Regional Forum, ADMM-Plus जैसे प्लेटफार्मों में भाग लेता है।
- यह भारत की Act East Policy और Indo-Pacific Vision का अहम हिस्सा है।
- भारत के लिए अवसर:
 - व्यापार विविधीकरण,
 - समुद्री सहयोग,
 - India-Myanmar-Thailand Trilateral Highway जैसी क्षेत्रीय कनेक्टिविटी परियोजनाओं को बढ़ावा देना।

Key Points for Exam Notes:

- **Event:** ASEAN Summit 2025, Kuala Lumpur
- **New Member:** East Timor (Timor-Leste) → 11th ASEAN Member
- **First New Member Since:** 1999 (Cambodia)
- **U.S. Role:** Trump's first ASEAN participation since 2017
- **Focus Areas:** Trade, Maritime Security, Regional Stability
- **India's Role:** Act East Policy, Indo-Pacific Cooperation, ASEAN-India Strategic Partnership
- **Significance:** Strengthening multilateralism in Asia amidst great-power rivalry