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Compiled by **Sapna Chauhan**

01 China to Curb Exports of AI, Photovoltaic & Biotech Technologies

GS 3 · Economy / S&T

The Hindu · Page 1 · Ananth Krishnan, Beijing



China to curb exports of technologies such as AI, photovoltaics

Ananth Krishnan
BEIJING

China on Friday announced a sweeping draft plan to restrict exports of more than 40 cutting-edge technologies, including solar manufacturing technologies, AI models, and some biotech platforms.

A number of technologies related to the manufacture of solar cells have been listed for either a complete export ban or restricted exports. While the draft plan does not restrict most solar exports, new controls on next-generation solar manufacturing technologies could impact efforts by countries including India to reduce dependence on China as they look to move up the solar chain.

Several AI-driven technologies have also been listed in the draft plan, announced on Friday by the Ministry of Commerce and the Ministry of Science and Technology and titled "Announcement No. 48".

It covers 40 key technologies in the fields of AI, biomedicine and photovoltaics. Of these, 14 technologies were proposed for a complete prohibition of export, including perovskite and tandem solar-cell module manufacturing technologies, AI-driven technology that could be used to generate and mutate malicious code, and some platforms related to cell and gene therapy.

A further 26 technologies were listed for restricted exports, including polysilicon engineering technologies that are used to make solar cells, if they involve production lines with annual output capacities of at least 30,000 tonnes.

A new **roadblock**

The draft plan proposes export bans on 14 technologies and restrictions on 26 others

Solar: Perovskite and tandem-cell manufacturing know-how among the proposed bans; polysilicon production faces restrictions

AI, biotech: Select AI systems and cell- and gene-therapy platforms also targeted

India might face potential delays in solar investments, licensing and domestic manufacturing

Potential delays

Indian manufacturers in the solar space may, going forward, be impacted, including by licensing delays, said Santosh Pai, Honorary Fellow, Institute of Chinese Studies (ICS) and a cross-border lawyer.

CONTINUED ON » PAGE 8

Why in News: China has announced a sweeping **draft plan ("Announcement No. 48")** to restrict exports of 40 cutting-edge technologies in **AI, biomedicine and photovoltaics (PV)**. Controls on next-generation solar manufacturing know-how could hurt India's effort to move up the solar value chain.

Key Highlights

- Issued jointly by China's **Ministry of Commerce (MOFCOM)** and **Ministry of Science and Technology**.
- **14 technologies → complete export ban**, including **perovskite and tandem solar-cell module** manufacturing technologies, AI-driven tools that can **generate and mutate malicious code**, and some **cell- and gene-therapy** platforms.
- **26 technologies → restricted exports** (licence needed), including **polysilicon engineering technologies** for production lines with annual capacity of **≥ 30,000 tonnes**.
- **12 PV technologies** added, covering polysilicon production, wafer manufacturing and solar-cell manufacturing.
- **Rationale:** "safeguard national security and interests" — PV technologies are increasingly used in **aerospace, defence and unmanned systems**.
- Most ordinary solar *product* exports are **not** restricted — the curbs target **know-how and manufacturing technology**.

Impact on India

- Indian solar manufacturers may face **licensing delays** (Santosh Pai, Institute of Chinese Studies).
- India's capacity is strong in **module assembly** but thin in **cells, wafers and polysilicon**, where Chinese equipment and process know-how are critical.
- Perovskite–silicon tandem cells are the **next efficiency frontier**; a ban may slow technology transfer to Indian firms.

Announcement No. 48	Details
Total covered	40 key technologies (AI, biomedicine, photovoltaics)
Prohibited (14)	Perovskite & tandem cell-module manufacturing; AI tech to generate/mutate malicious code; certain cell & gene-therapy platforms
Restricted (26)	Polysilicon engineering (lines ≥ 30,000 t/yr) and other technologies — exports need a licence
Stated reason	National security — dual use of PV in aerospace, defence, unmanned systems

⚓ STATIC CONNECT · SOLAR PV VALUE CHAIN & EXPORT CONTROLS

PV value chain: Polysilicon → Ingot → Wafer → Cell → Module. China holds **over 80%** of global capacity at every stage (IEA).

Perovskite: a crystal structure (ABX_3) named after the mineral **calcium titanate ($CaTiO_3$)**, discovered in the Ural Mountains and named after Russian mineralogist **Lev Perovski**. Cheap, thin-film, tunable band gap.

Tandem cell: a perovskite layer stacked on silicon so each layer absorbs a different part of the spectrum. Lab

India's push: PLI Scheme for High-Efficiency Solar PV Modules (₹24,000 crore, two tranches); **ALMM** (Approved List of Models & Manufacturers) — List-I for modules, **List-II for cells** (applicable from June 2026); Basic Customs Duty on imported cells and modules.

China's earlier curbs: gallium & germanium (2023), graphite (2023), rare-earth elements and magnets (2025).

Wassenaar Arrangement (1996, export controls on conventional arms & dual-use goods): India joined in **December 2017**; China is **not** a member.

efficiencies now exceed **33%**, beyond the theoretical limit of single-junction silicon cells.

🔎 **Fact note:** The report's opening line says "more than 40" technologies, but the details list **40** (14 prohibited + 26 restricted). Use **40**.

02 AI Agents Accessed Data of Indian Entities: CERT-In

GS 3 · Cyber Security

The Hindu · Page 10 · Aroon Deep, New Delhi

Why in News: CERT-In said several Indian organisations were reached by **AI agents undergoing testing**. It received "multiple **voluntary disclosures from AI model providers**" that their tools, during research and evaluation, had accessed **live systems of Indian organisations**.



AI agents accessed data of Indian entities, says CERT-In

Agency says it received 'multiple voluntary disclosures from AI model providers' stating that their tools, during research and evaluation activity, had reached live systems of Indian organisations

Aroon Deep
NEW DELHI

The Computer Emergency Response Team, India (CERT-In) said on Thursday that several Indian organisations had been targeted by Artificial Intelligence agents that were undergoing testing.

AI agents – which are pieces of code that act autonomously when given certain instructions unlike a chat-response back-and-forth with a chatbot – have been taking advantage of weaknesses across Indian organisations' cloud and web assets, and were accessing information they did not need, and should not have access to, CERT-In said.

Prone to exploitation

While CERT-In's disclosure does not name any affected organisation, the revelation is nonetheless significant, as it implies that Indian firms and government organisations' cybersecurity posture are now susceptible to be exploited if any vulnerability can be inferred by an agent. In other words, what a human security researcher may find in a manual review of an organisation's cybersecurity posture, could now be programmatically identified and exploited by agents.

CERT-In, which operates under the Ministry of Electronics and Information Technology (MEITY) and is exempt from the Right to Information (RTI) Act, 2005, reveals little about data breach cases that are mandatory to report to the body under directions it issued in 2022. The organisation said it was sent "multiple voluntary disclosures from AI model providers stating that their models, during research and evaluation activity on the Internet, had reached the live systems of Indian organisations".

Model providers

CERT-In did not reveal who the model providers are. OpenAI, Anthropic and Google, which make some of the main U.S.-based AI models like ChatGPT, Claude and Gemini, have each publicly disclosed details of advanced agents running amok and hacking public websites, like the coding repository HuggingFace.

The agents' subsequent behaviour entailed "reading business records, including personal data and confidential material, through credentials and connection settings exposed in application configuration, public code repositories and permissive cloud service roles," CERT-In said in its note.

But, CERT-In noted, many of the weaknesses these organisations had displayed were "conventional", meaning that these were known vulnerabilities for which cybersecurity professionals already carry out a hygiene check, if all goes well. "In the incidents observed, AI found and exploited these conventional weaknesses faster, more exhaustively and at greater scale than human attackers," CERT-In noted.

"The affected organisations could not detect the unauthorised access on their own," CERT-In said, noting that its own proactive hunt for such behaviour and model providers' reports are what led to this disclosure.

The affected organisations could not detect the unauthorised access on their own, said CERT-In. REUTERS

Key Highlights

- **AI agents** are code that acts **autonomously** on instructions — unlike a back-and-forth chatbot.
- They exploited weaknesses in organisations' **cloud and web assets** and accessed data they should not have.
- **Data reached:** business records, **personal data** and confidential material — through credentials and connection settings exposed in **application configuration**, **public code repositories** and **permissive cloud service roles**.
- The weaknesses were **"conventional"** — known flaws a basic cyber-hygiene check should catch. But AI found and exploited them **faster, more exhaustively and at greater scale** than human attackers.
- The affected organisations **could not detect** the access on their own; CERT-In's proactive hunt and providers' reports led to the disclosure.
- No affected organisation or model provider was named.

Significance

- What a human researcher might find in a manual review can now be **found and exploited programmatically**.
- CERT-In is **exempt from the RTI Act**, so little is public about the breaches that must be reported to it.

⚓ STATIC CONNECT · INDIA'S CYBER SECURITY ARCHITECTURE

Body / Measure	Key Facts
CERT-In	Set up in **2004** under **MeitY**. National agency for incident response under **Section 70B, IT Act 2000** (inserted by IT (Amendment) Act 2008). Functions: collect, analyse and share incident information; forecasts and alerts; emergency response; coordination; advisories and vulnerability notes.
CERT-In Directions, 2022	Report cyber incidents within **6 hours**; keep ICT logs for **180 days**; sync clocks with NTP servers; VPN/cloud providers to keep subscriber data for 5 years.
RTI exemption	CERT-In was added to the **Second Schedule** of the RTI Act (Section 24) in 2023. Exempt bodies must still disclose information on **corruption and human-rights violations**.
NCIIPC	Protects **Critical Information Infrastructure** under **Section 70A**; works under **NTRO**.
I4C	Indian Cyber Crime Coordination Centre, under the **Ministry of Home Affairs**; helpline **1930**; portal cybercrime.gov.in.
Cyber Surakshit Bharat	MeitY + NeGD + industry (2018) — trains government officials (especially CISOs) in cyber security.

Cyber Swachhta Kendra	Botnet Cleaning & Malware Analysis Centre, run by CERT-In; offers free bot-removal tools.
DPDP Act 2023	Personal-data breaches must be reported to the **Data Protection Board** and affected persons (operationalised by the DPDP Rules, 2025).
Budapest Convention	Council of Europe convention on cybercrime, the first international treaty in this area. Opened for signature in 2001, **in force 2004**. **India is not a party**, citing concerns over cross-border data access and the fact that India was not part of the drafting.
UN Convention against Cybercrime	Adopted by the UN General Assembly in **December 2024**; opened for signature in **Hanoi** in October 2025.

🔎 **Fact note on the source slide:** The **I4C scheme was approved in October 2018**, but the centre was formally **inaugurated in January 2020**. Both dates are asked in exams.

03 L&T-built INS *Samarthak* Inducted into the Indian Navy

GS 3 · Defence

The Hindu · Page 10 · Saurabh Trivedi, New Delhi

L&T-built *INS Samarthak* inducted into Indian Navy

Saurabh Trivedi
NEW DELHI



The indigenous multi-purpose vessel *INS Samarthak*. PTI

The Indian Navy on Friday commissioned *INS Samarthak*, the first of two multi-purpose vessels being built by Larsen & Toubro (L&T), strengthening its capability to test and evaluate indigenously developed sensors and weapons amid an evolving maritime security environment.

Vice-President C.P. Radhakrishnan presided over the commissioning ceremony in the presence of Chief of the Naval Staff Admiral Krishna Swaminathan, and senior naval and Defence officials in Karwar.

According to the Indian Navy, *INS Samarthak* marks a significant milestone in India's indigenous shipbuilding efforts, highlighting the growing role of the private sector in developing platforms for the armed forces. The vessel has over 75% indigenous content, according to the Navy.

Conceived primarily as a versatile platform for trials and evaluation, the ship will support the testing and training of new sensors and weapons developed by domestic industry. Its induction is expected to strengthen the Navy's ability to validate indigenous technologies before wider deployment, it added.

Named *Samarthak*, meaning 'the proponent', the vessel has been designed to undertake a range of operational and developmental tasks. Besides supporting trials and evaluation, it can carry out maritime surveillance and reconnaissance, offshore patrolling and disaster relief operations.

The Navy said the vessel's versatility would also be particularly useful in an unpredictable maritime environment where traditional security challenges are increasingly accompanied by non-traditional threats.

Why in News: The Indian Navy commissioned **INS *Samarthak***, the **first of two Multi-Purpose Vessels (MPVs)** built by **Larsen & Toubro (L&T)**, at **Karwar**. It will test and evaluate indigenously developed sensors and weapons.

Key Highlights

- **Vice-President C.P. Radhakrishnan** presided, with Chief of the Naval Staff **Admiral Krishna Swaminathan**.
- **Over 75% indigenous content**; marks the growing role of the **private sector** in building naval platforms.
- **Primary role:** trials and evaluation — testing and training for new **sensors and weapons** from domestic industry before wider deployment.
- **Secondary roles:** maritime surveillance and reconnaissance, offshore patrolling and **HADR** (disaster relief).
- **"Samarthak"** means **"the proponent"**.
- Useful where traditional threats are mixed with **non-traditional threats** (piracy, drones, trafficking, IUU fishing).

⚓ STATIC CONNECT · NAVAL SHIPBUILDING & KARWAR

Launch vs Delivery vs Commissioning: Launching = hull first floated; **Delivery** = shipyard hands over after sea trials; **Commissioning** = formal induction, when the Naval Ensign is hoisted and the ship enters active service.

Karwar (Uttara Kannada, Karnataka): home of **INS Kadamba**; being expanded under **Project Seabird** into one of the largest naval bases in the region. Strategic location on the west coast, away from the Mumbai port's congestion.

Indigenisation push: Defence Acquisition Procedure 2020; **Positive Indigenisation Lists**; Navy's goal to be a fully **"Builders' Navy"** (Aatmanirbhar) by 2047; **Maritime Amrit Kaal Vision 2047**; ₹69,725 crore shipbuilding and maritime package (2025).

Constitution: The **President** is the Supreme Commander of the armed forces (**Art. 53(2)**). The **Vice-President** is the ex-officio Chairman of the Rajya Sabha (**Art. 64**).

04 NGT Takes Note of *The Hindu* Report on Toxic Water

GS 2 / GS 3 · Environment

The Hindu · Page 10 · Nikhil M. Babu, New Delhi

NGT takes note of *The Hindu* report on toxic water

Nikhil M. Babu
NEW DELHI

The National Green Tribunal (NGT) has taken *suo motu* cognisance of issues raised by a report in *The Hindu* on hexavalent chromium contamination in Uttar Pradesh and gaps in the government's efforts to resolve the issue.

Based on the article, the NGT has issued notices to 14 authorities, including the Chief Secretary of Uttar Pradesh, the National Mission for Clean Ganga (NMCG) and the All India Institute of Medical Sciences, New Delhi, as per a recent order.

The NGT noted that the news item 'Groundwater that glows yellow-green' raises "substantial issues" relating to compliance with the environmental norms. "Issue notice to the above respondents for filing their response by way of affidavit before the Tribunal at least one week before the next date of hearing," an order dated October 5 read.

The article talks about how decades of industrial waste dumping have contaminated groundwater with hexavalent chromium across parts of three Uttar Pradesh districts.

Why in News: The **National Green Tribunal (NGT)** has taken ***suo motu* cognisance** of a report, "Groundwater that glows yellow-green", on **hexavalent chromium [Cr(VI)] contamination** in Uttar Pradesh and gaps in government efforts to fix it.

Key Highlights

- Notices issued to **14 authorities**, including the **Chief Secretary of UP**, the **National Mission for Clean Ganga (NMCG)** and **AIIMS, New Delhi**.
- The NGT said the report raises "**substantial issues**" of compliance with environmental norms; respondents must file affidavits at least one week before the next hearing (order dated **October 5**).
- Decades of **industrial waste dumping** have contaminated groundwater across parts of **three UP districts**.

Hexavalent Chromium — Know the Basics

- **Sources:** chrome tanning (leather), chromium chemicals, electroplating, dyes and pigments, chromite processing. The **Kanpur tannery belt** (e.g., Rania–Khan Chandpur, Kanpur Dehat) is a known hotspot.
- **Cr(VI) vs Cr(III):** Cr(VI) is highly **toxic, soluble and mobile** in groundwater; Cr(III) is far less toxic and is even a trace nutrient.
- **Health: IARC Group 1 carcinogen** — lung cancer, skin ulcers, kidney and liver damage.
- **Drinking-water limit (BIS IS 10500):** total chromium **0.05 mg/L**.
- **Remediation: reduce** Cr(VI) to Cr(III) (e.g., with ferrous compounds), pump-and-treat, permeable reactive barriers, and safe removal of waste dumps.

⚓ STATIC CONNECT · NATIONAL GREEN TRIBUNAL

Origin: set up on **18 October 2010** under the **NGT Act, 2010**, drawing on **Art. 21** (right to a healthy environment) and the Rio Declaration 1992 (Principle 13). India is often cited as the **third country**, after **Australia and New Zealand**, with a dedicated environmental tribunal.

Benches: Principal Bench — **New Delhi**; Zonal — **Bhopal** (Central), **Pune** (Western), **Kolkata** (Eastern), **Chennai** (Southern).

Principles: sustainable development, **precautionary principle**, **polluter pays**.

Procedure: not bound by the CPC 1908; follows **natural justice**. Aims to decide cases within **6 months**. Appeals lie to the **Supreme Court within 90 days**.

***Suo motu* power:** upheld by the SC in *Municipal Corporation of Greater Mumbai v. Ankita Sinha* (**2021**).

Strength: 10–20 Judicial Members and 10–20 Expert Members.

Post	Qualification
Chairperson	Retired SC judge or retired Chief Justice of a High Court
Judicial Member	Is or was a High Court judge, or qualified to be one
Expert Member	15 years' experience in environment, forestry, biodiversity and related fields, or in environmental administration

Schedule I — 7 Acts: Water Act 1974; Water Cess Act 1977; Forest (Conservation) Act 1980; Air Act 1981; Environment (Protection) Act 1986; Public Liability Insurance Act 1991; Biological Diversity Act 2002.

Not covered: Wildlife (Protection) Act 1972 and the **Forest Rights Act 2006**.

🔎 **Fact note on the source slides:** The **5-year term with no reappointment** and appointment of the Chairperson "in consultation with the CJI" come from the **original NGT Act, 2010**. The **Tribunals Reforms Act, 2021** changed this to a **4-year term**, made members **eligible for reappointment**, and moved appointments to a **Search-cum-Selection Committee headed by the CJI** (or an SC judge he nominates). These provisions have been repeatedly challenged in the Supreme Court (*Madras Bar Association* cases). For exams, check which version the question is about.

05 10 Years of the Kigali Amendment — From Ozone Protection to Climate Action

GS 3 · Environment

Environment · International Agreements

Why in News: The **Kigali Amendment** to the Montreal Protocol completed **10 years on 15 October 2026**. The anniversary has renewed focus on the global phase-down of **hydrofluorocarbons (HFCs)**. The World Ozone Day 2026 (16 Sept) theme was *"From ozone protection to climate action: 10 years of Kigali"*.



Key Highlights

- A **legally binding** amendment to the 1987 **Montreal Protocol** that mandates a gradual **phase-down** of HFC production and consumption.
- **Why HFCs?** The Montreal Protocol phased out ~99% of ozone-depleting substances (CFCs, HCFCs). Industry switched to HFCs because they **do not harm the ozone layer**, but they are powerful **greenhouse gases**.
- HFCs are **short-lived climate pollutants (SLCPs)** with Global Warming Potentials **hundreds to thousands of times** that of CO_2.
- **First proposed in 2009** by the **Federated States of Micronesia and Mauritius**. Adopted **15 Oct 2016** at **Kigali, Rwanda** (MOP-28); **in force 1 Jan 2019**.
- **Target:** cut HFC use by **80–85%** by the late 2040s, avoiding roughly **0.3–0.5 °C** of warming by 2100.
- Run through the **UNEP Ozone Secretariat** (Nairobi), with funding from the **Multilateral Fund**.

Group	Countries	Baseline	Freeze	Final cut
Developed (A2)	USA, EU, Japan etc.	2011–13	Reductions from 2019	85% by 2036
Developing Group 1 (A5)	China, Brazil, most of Africa etc.	2020–22	2024	80% by 2045
Developing Group 2 (A5)	**India**, Pakistan, Iran, Iraq, Gulf states	**2024–26**	**2028**	**85% by 2047**

⚓ STATIC CONNECT · OZONE REGIME

Vienna Convention (1985): framework treaty to protect the ozone layer.

Montreal Protocol (signed **16 Sept 1987**, in force 1989): the **first UN treaty to achieve universal ratification** (2009). 16 Sept is **World Ozone Day**.

Amendments: London 1990 (created the Multilateral Fund), Copenhagen 1992, Montreal 1997, Beijing 1999, **Kigali 2016**.

Recovery: the ozone layer is expected to return to 1980 levels by about **2040** globally, **2045** over the Arctic and **2066** over the Antarctic (UNEP–WMO 2022 assessment).

India: ratified Kigali in **2021**; interim steps 10% (2032), 20% (2037), 30% (2042), then 85% (2047). Launched the **India Cooling Action Plan (2019)**, one of the first countries to do so. Phased out HCFC-141b (foam blowing) in 2020.

Common GWPs: HFC-134a ≈ 1,430; HFC-23 ≈ 14,800 (CO_2 = 1).

Alternatives: hydrofluoro-olefins (HFOs) and natural refrigerants — ammonia, CO_2, hydrocarbons (R-290 propane, R-600a isobutane).

🔎 **Fact note:** Estimates of avoided warming vary by source. UNEP often says "up to 0.4 °C"; the wider range of **0.3–0.5 °C** is also widely quoted. Read the options carefully in MCQs.

06 India's Ramsar Tally Reaches 103 — Sukhna Wetland & Sauj Jheel

GS 3 · Environment · Prelims

Environment · Wetlands

Why in News: The Union Environment Minister announced that India now has **103 Ramsar sites**, after the designation of **Sukhna Wetland (Chandigarh)** and **Sauj Jheel (Uttar Pradesh)**.

- **Sukhna** is Ramsar Site no. **2602** and **Sauj Jheel** no. **2603** (as reported).
- With Sauj Jheel, **Uttar Pradesh's tally rises to 14** (as reported). Mainpuri district now hosts two sites: **Saman Bird Sanctuary** (2019) and **Sauj Jheel**.



Representative image: Red-wattled Lapwing, a common resident wader of Indian wetlands (IUCN: Least Concern)

	Sukhna Wetland (Chandigarh)	Sauj Jheel (Uttar Pradesh)
Type	Peri-urban **man-made reservoir** and freshwater wetland	**Perennial, shallow floodplain lake**; an **Important Bird & Biodiversity Area (IBA)**
Location	Edge of Chandigarh UT, at the foothills of the **Shivalik range** (Outer Himalaya)	Near Kishni, **Mainpuri district**, in the agrarian **Indo-Gangetic floodplain** (Ganga basin)
Origin / Background	Created in **1958** by damming the seasonal **Sukhna Choe** stream; planned by **Le Corbusier** and chief engineer **P.L. Varma**	Part of a wetland complex close to **Saman Bird Sanctuary** (Ramsar site since 2019)
Ecological role	Regulates sediment and storm runoff; green buffer for the city; stopover on the **Central Asian Flyway**; mosaic of **ecotones** (deep water, marsh, reed beds, scrub, forest)	Regularly hosts **> 30,000 waterbirds** (meets a key Ramsar criterion); rich water plants — **sacred lotus**, wild sugarcane
Key species	**Common Pochard** (VU), **Pallas's Fish Eagle** (EN), **Black Pond Turtle** (EN)	**Sarus Crane** (VU), **Greater Spotted Eagle** (VU)
Threats / Management	**Siltation** from the Shivalik catchment; invasive weeds; soil and moisture conservation in the catchment	Seasonal fishing bans in breeding season; ban on fine-mesh monofilament nets; regulated grazing

⚓ STATIC CONNECT · RAMSAR CONVENTION & INDIA

Convention on Wetlands: signed **2 Feb 1971** at **Ramsar, Iran** (on the Caspian Sea); in force 1975. 2 Feb is **World Wetlands Day**. Secretariat: **Gland, Switzerland**. COP-15 was held at Victoria Falls, Zimbabwe (2025).

Montreux Record: register of Ramsar sites under threat. Indian sites on it: **Keoladeo NP** (Rajasthan) and **Loktak Lake** (Manipur). Chilika was removed in 2002.

Key criterion: a wetland that regularly supports **20,000 or more waterbirds** qualifies (Criterion 5).

India: party since **1982**; first sites **Chilika** (Odisha) and **Keoladeo** (Rajasthan), 1981. **Tamil Nadu** has the most sites; the **Sundarbans** (West Bengal) is the largest.

Framework: Wetlands (Conservation & Management) Rules, 2017; **NPCA** (National Plan for Conservation of Aquatic Ecosystems); **Amrit Dharohar** (2023).

Sukhna Lake was declared a **"legal entity/living person"** by the Punjab & Haryana High Court (2020). Chandigarh's **Capitol Complex** is part of the UNESCO site *The Architectural Work of Le Corbusier* (2016).

🔎 **Fact note on the source slide:** The slide says Mainpuri is "the first and only district in India to host two Ramsar sites". This is **not correct at the national level**: districts such as **Chengalpattu** (Tamil Nadu) and **Udaipur** (Rajasthan) already host more than one. At most, the claim may hold for Uttar Pradesh, so do not use it as an all-India fact. Also, the source spells the engineer's name "P.L. Verma"; the usual spelling is **P.L. Varma**.

07 Editorial: Necessary Corrective — Revision of Electoral Rolls

GS 2 · Polity

The Hindu · Page 6 · Editorial · "Re-enrolment and summary revision are necessary, but not sufficient"

Necessary corrective

Re-enrolment and summary revision are necessary, but not sufficient

The Election Commission of India (ECI)'s announcement of a special summary revision of electoral rolls in 17 States and Union Territories is, on the face of it, a routine exercise. This annual exercise to enrol new electors was stalled last year due to the Special Intensive Revision (SIR) of electoral rolls, and resumes with January 1, 2027 as the qualifying date. Seen alongside what is simultaneously going on, however, the exercise is a corrective to the missteps in the SIR. The ECI is also conducting a "special drive" to re-enrol those "left out", using the original Form 6 without the ancestry declaration. It has capped Form 7 objections amid reports of bulk filings in several States and will release searchable electoral rolls in text PDFs to parties and candidates. Together, these measures add up to an implicit admission about the severe flaws in the SIR. The drive is the most telling. By dispensing with mapping to older rolls and logical-discrepancy checks, it concedes that the SIR's insistence on them was unnecessary. For States that are going to polls early next year – Uttar Pradesh, Punjab and Uttarakhand - this is a welcome opportunity to repair the truncated rolls prepared by the SIR. Those wrongly deleted can now be re-enrolled, and newly eligible electors can be added, without recourse to "logical discrepancy" checks or quasi-citizenship tests. The ECI must report re-enrolments (after deletion) separately from fresh enrolments and the special drive's house-to-house visits must ensure that the burden of re-enrolment does not fall on the electors again.

For States that have already voted on the basis of SIR rolls, however, a number of questions remain. In West Bengal, appellate tribunals have disposed of barely 3% of the 38 lakh appeals, 22 lakh of them by deleted electors, and restored the electors in 93% of the cases decided. The ECI has yet to say whether these appellants can also use the new drive or what becomes of the tribunals. In States such as Bihar, where the gender ratio fell from 907 in the 2024 Lok Sabha rolls to 892 in the SIR rolls, young married women who were struck off must be allowed the opportunity to re-enrol. The Supreme Court of India, which upheld the SIR in May and is now hearing petitions concerning West Bengal, Delhi and the Commission's conduct, should ensure that genuine voters are reinstated on the electoral rolls. The ECI's 2002-03 guidelines show that a revision need not shift the burden on to the elector. Any future intensive revision must revert to that model. The corrective steps owe much to the sustained protests against the SIR. But they are not enough for accountability. The two Election Commissioners objected on record to decisions taken by the Chief Election Commissioner (CEC) of India, and their questions remain unanswered. The appointment process laid down in *Anoop Baranwal*, which the government got overturned in Parliament in 2023 and on which a two-judge Bench delivered a split verdict last month, must also be settled. And the official who presided over the flawed process, CEC Gyanesh Kumar, must resign.

Context: The **Election Commission of India (ECI)** has announced a **special summary revision** of electoral rolls in **17 States/UTs**, with **1 January 2027** as the qualifying date. It is also running a **"special drive"** to re-enrol those left out of the **Special Intensive Revision (SIR)**.

ECI's Recent Steps

- Annual summary revision resumes (it was stalled last year because of the SIR).
- The special drive uses the original **Form 6**, **without the ancestry declaration**.
- **Form 7** objections capped, after reports of bulk filings.
- **Searchable text-PDF rolls** to be given to parties and candidates.

The Editorial's Argument

- The steps amount to an **implicit admission of flaws in the SIR**. Dropping the mapping to older rolls and the "logical discrepancy" checks shows they were unnecessary.
- For poll-bound **UP, Punjab and Uttarakhand**, this is a chance to repair rolls. Re-enrolments should be reported **separately** from fresh enrolments.
- **West Bengal:** tribunals have decided barely **3% of 38 lakh appeals** (22 lakh by deleted electors), restoring electors in **93%** of the cases decided.
- **Bihar:** gender ratio on the rolls fell from **907 (2024 Lok Sabha) to 892 (SIR)**. Young married women who were struck off must be re-enrolled.
- The ECI's **2002–03 guidelines** did not put the **burden of proof on the elector**; future revisions should follow that model.
- Accountability: dissent by two Election Commissioners remains unanswered. The appointment question after *Anoop Baranwal* must be settled. The paper calls for the CEC's resignation.

The Other View (for balanced answers)

- The **ECI** argues the SIR was needed to clean rolls of **dead, shifted, duplicate and ineligible** entries. Under **Art. 326**, only **citizens** can be electors.
- The **Supreme Court upheld the SIR** in May (as reported); the ECI has a plenary mandate over rolls under **Art. 324**.
- The special drive and searchable rolls can be read as the ECI **responding to feedback**, not only as an admission of error.
- Calls for an official's resignation are a **political/editorial position**. In answers, focus on **institutional reform**: transparency, timelines for appeals, and protection for vulnerable groups (women, migrants, the poor).

⚓ STATIC CONNECT · ELECTORAL ROLLS & THE ECI

Provision	Key Facts
Art. 324 / 325 / 326	ECI superintends elections and electoral rolls · one general roll, no exclusion on religion, race, caste or sex · adult suffrage (18 years, 61st Amendment 1988)

RPA 1950	Sec. 14 — qualifying dates (since 2021: **1 Jan, 1 Apr, 1 Jul, 1 Oct**); Sec. 16 — disqualifications (e.g., non-citizen); Sec. 21 — preparation and revision of rolls, including **special revision**; Sec. 22 — correction of entries
Types of revision	**Summary:** draft roll published, then claims and objections. **Intensive:** fresh roll prepared through door-to-door enumeration by **BLOs**. **Special:** ordered by the ECI for a specific area or reason.
Key Forms	**Form 6** — new enrolment · 6A — overseas electors · 6B — Aadhaar linkage (voluntary) · **Form 7** — objection/deletion · **Form 8** — shifting/correction
Appointment of CEC/ECs	*Anoop Baranwal v. UoI* (**2023**, Constitution Bench): committee of the **PM, LoP and CJI** until Parliament makes a law. **CEC & Other ECs Act, 2023:** committee of the **PM, LoP (or leader of the largest opposition party) and a Union Cabinet Minister** nominated by the PM. The CJI is not a member.
Removal	CEC — **same manner as an SC judge** (Art. 324(5)); ECs — on the CEC's recommendation
CEC Gyanesh Kumar	26th CEC (Feb 2025); the **first appointed under the 2023 Act**

08 Op-Ed: Metrics to Minds — Restoring Purpose to Universities

GS 2 · Education

The Hindu · Page 6 · Shelley Walia (taught cultural and literary theory at Panjab University)

Metrics to minds — restoring purpose to universities

There was a time when a national examination served a clear and limited purpose in India: to find a few thousand officers, soldiers and engineers, and to do it fairly across a vast subcontinent. That restraint is gone. We have taken the logic of the Indian Administrative Service (IAS) and the Indian Institutes of Technology (IITs) and stretched it across every discipline, every college and every career. A device designed for the few now governs the many. And the country is paying the price for this overreach.

The National Eligibility-cum-Entrance Test (NEET), the Joint Entrance Examination (JEE), the University Grants Commission National Eligibility Test (UGC NET) and other examinations now test lakhs of candidates across disciplines ranging from oncology to organic chemistry and from history to Punjabi literature, all funnelled through the same multiple-choice format. Understandably, this method is designed for uniformity, when in fact it is being used to identify talent, reasoning ability and critical thinking. This precisely is what uniform testing misses out.

Let departments decide

The alternative is simple. Let institutions choose. No national agency can tell what a good student of literature or physics is made of better than the department that will admit her. Departmental examinations indeed, restore judgment to faculty, and freedom to students to apply where their aptitude lies, not where a single all-India rank deposits them. This is not nostalgia. It is the norm in the very systems in the West that we hold up as models.

Professorial appointments were once based on discussions with people who knew the work. It was an examination of judgment through intellectual interchange, not of facts. Teachers, who were superb, often went beyond the syllabus and were always ready for a dialogue. None had sat the NET. Today, there are many students with far more talent than the test rewards. They fail not because they cannot think, but because the test does not ask them to. It merely asks them to master a technique. We have, in the name of standardisation, built a mechanism that rejects exactly what it claims to examine.

No education body appears to have ever conducted the historical comparison that would make this argument undeniable rather than anecdotal. I would wager what such a survey would find, having watched the change from the inside for decades. The quality of discussion in a classroom, the depth of a student's reading, the willingness of a teacher to be genuinely questioned rather than merely quoted, has thinned considerably. What has replaced it is a generation arriving through memorisation-heavy, choice-based testing, showing little of the wide, unstructured reading that used to be simply assumed of anyone entering a classroom. The examination has indeed changed what the classroom was meant to be.



Shelley Walia

Has taught cultural and literary theory at Panjab University Chandigarh

Standardised examinations are undermining academic judgement, intellectual diversity and institutional autonomy in India's higher education system

The numbers game

The same malady runs through the procedures of recruitment. Selection committees increasingly lean on publication counts and research scores. Minimum publication requirements attached to promotions and appointments have created a market for papers rather than a market for ideas. Journals of no discernible academic standing exist largely to accept whatever applicants must publish to meet prescribed research-score requirements by a given deadline. The University Grants Commission's 2018 Regulations discontinued the earlier API-based Performance Based Appraisal System (PBAS) and introduced a revised assessment framework incorporating research scores. Yet, the underlying problem persists. Academic achievement is still too often reduced to what can be counted.

The same arithmetic has hollowed out the PhD itself – this is being said based on direct observation rather than hearsay. When a candidate's doctorate is weighed for a teaching post, 30 marks are commonly set aside for it in the selection matrix. This is a substantial share of the total. Yet, almost none of that weight indicates the quality of the mind behind the thesis, the rigour of the argument, or the calibre of the papers the candidate drew from it. Getting the International Standard Book Number (ISBN) or an International Standard Serial Number (ISSN) is no evidence of scholarly merit. So-called authenticated journals publish across seven or eight disciplines under a single title, a "Journal of International Studies" that will print history, management, literature, and law in the same issue, with no serious process of sending submissions out to qualified referees. Whoever submits, gets published.

Moreover, the exercise of supervision has grown just as flimsy at the other end of the pipeline, something visible in a doctoral thesis dashed off with a report from a supervisor who has not properly read it. The *viva voce* sadly stands reduced to a formality so thin that those who sit through it treat it as something of a joke.

The absurdity reaches its peak at the vice-chancellor's chair. Search committees have been observed asking candidates how many patents they hold – a question with no relevance whatsoever outside a narrow band of applied science. The answer has been observed to favour candidates from the Science, Technology, Engineering and Mathematics (STEM) fields almost by design. This is because a scientist running a large laboratory can attach his name to every research candidate's paper that passes through it, thus inflating a publication count which no humanities scholar working alone could ever match.

Such a candidate arrives at the vice-chancellor's office having spent an entire career inside one laboratory, with no exposure to the university beyond it. It would not be incorrect at all to say that a vice-chancellor of this kind has, in many cases, never read a novel or a poem, and he is being asked to preside over an institution whose purpose is precisely the cultivation of minds beyond the laboratory.

None of this can be fixed by adjusting the metrics alone, because a great many selections never really turn on metrics in the first place. Too many appointments in Indian universities are settled by networking rather than judgment. Merit, in such cases, was never actually the criterion being weighed.

This writer's own interview for the post of associate professor had a committee of four of the most eminent professors in the country, headed by a genuinely learned vice-chancellor; the interview was conducted for over 40 minutes. It was a rigorous, unhurried conversation, and the selection that followed was entirely fair, without a single string pulled on anyone's behalf. That is the standard against which today's appointments, and for that matter today's admissions, ought to be measured.

Let us be clear. Harsher laws will not repair a broken system. Penalties for examiners and testing agencies may punish a lapse, but they do nothing to prevent it. If we want universities that can compete globally, we must start where quality is actually made. This is happening in university departments through appointments made by peers who are willing to be answerable for their judgment. This is the operating logic observed at many universities of higher learning.

Not for reasons of nostalgia

Decentralising examinations back to faculties, and restoring appointments to peer scrutiny and not point-scoring, is not a wistful turn. It is a claim about what a university is for. It demands more time, more accountability, and the courage to defend a choice without a number to hide behind. In return, it gives institutions back their proper responsibility to select candidates not for "cracking" the examination, but for their intellectual competence. If we want universities that form minds rather than calculate scores, we must restore our trust in the academic judgement of those who work within them. Their integrity should be the measure of their decisions, and society must ultimately hold them accountable not for the scores they assign but for the quality of their judgement.

The Author's Argument

- **Over-extended exam model:** a national exam was once meant to pick a few thousand officers and engineers fairly. Its logic (IAS/IIT style) now governs **every discipline and college** through **NEET, JEE and UGC-NET**.
- **MCQ uniformity** misses what matters — **judgment, reasoning and critical thinking**. It rewards technique, not thought.
- **"Let departments decide":** faculty know best what a good literature or physics student looks like. This is the norm in the West.
- **The numbers game:** publication counts and research scores drive hiring. The result is a market of **low-quality and predatory journals**. The UGC 2018 Regulations dropped the API-based PBAS, but **metrics still dominate**.
- **PhD hollowed out:** about **30 marks** are given for a doctorate in selection, regardless of the thesis quality. **ISBN/ISSN** numbers are not proof of merit. *Viva voce* has become a formality.
- **VC selection** favours STEM metrics (patents, publication counts); many appointments still turn on **networking**.
- **Harsher laws won't fix it**: penalties punish lapses but don't prevent them. The fix is **peer judgment and accountability**.

Counter-view & Way Forward

- **Why central tests exist:** transparency, one window for students from all states, less **nepotism and capitation**, and a check on uneven board marking (a reason behind CUET).
- **Risk of decentralisation:** the author admits that networking already distorts appointments. Departmental exams could bring back **favouritism** without strong safeguards.
- **A middle path:** national screening plus department-level interviews, writing samples or portfolios; **quality-weighted** rather than count-based research assessment; external peer review of selections.
- Strengthen **research ethics** and integrity; make selection committees **answerable** through recorded reasons.
- Align with **NEP 2020**'s emphasis on critical thinking, multidisciplinarity and institutional autonomy.

⚓ STATIC CONNECT · HIGHER EDUCATION & TESTING

NTA (2017): autonomous body (registered society) under the Ministry of Education; conducts JEE Main, NEET-UG, CUET, UGC-NET. After the 2024 NEET controversy, a **High-Level Expert Committee under K. Radhakrishnan** (former ISRO chief) recommended reforms.

Public Examinations (Prevention of Unfair Means) Act, 2024: 3–5 years' jail for unfair means; up to ₹1 crore fine for service providers; **5–10 years** for organised paper leaks.

UGC: set up in 1953, statutory under the **UGC Act, 1956**. **UGC-CARE list** of journals (2019) was discontinued in 2025.

NEP 2020: proposes a single regulator, the **HECI**, with four verticals (NHERC, NAC, HEGC, GEC); multidisciplinary universities; academic and administrative autonomy.

Commissions: University Education Commission under **S. Radhakrishnan (1948–49)**; **Kothari Commission** (1964–66).

09 Prelims Pointers — Persons, Places, Species & Terms in News

Prelims

Quick-revision facts drawn from today's news · 17 October 2026

👤 Persons in News

Person	Why in News	Static / Key Facts
C.P. Radhakrishnan	Presided over the commissioning of INS *Samarthak* at Karwar	**15th Vice-President of India** (elected Sept 2025); ex-officio Chairman of the Rajya Sabha (**Art. 64**); elected by members of both Houses (**Art. 66**)
Adm. Krishna Swaminathan	Attended the commissioning as Chief of the Naval Staff	Head of the Indian Navy; the **President** is the Supreme Commander (**Art. 53(2)**)
Gyanesh Kumar	Editorial on the SIR and electoral-roll revision	**26th Chief Election Commissioner**; first appointed under the CEC & Other ECs Act, 2023
Santosh Pai	Said Indian solar firms may face licensing delays	Honorary Fellow, **Institute of Chinese Studies (ICS)**, New Delhi; cross-border lawyer
Le Corbusier & P.L. Varma	Planned Sukhna Lake (1958), now a Ramsar site	Swiss-French architect who planned **Chandigarh**; Capitol Complex is a UNESCO World Heritage component (2016). P.L. Varma was the chief engineer.
Shelley Walia	Op-ed on standardised testing in universities	Taught cultural and literary theory at **Panjab University**, Chandigarh

📍 Places in News

Place	Why in News	Location / Key Facts
Karwar	INS *Samarthak* commissioned	Uttara Kannada, **Karnataka**; **INS Kadamba** naval base; **Project Seabird**; on the Kali river estuary
Sukhna Lake	Designated a Ramsar site	Chandigarh, at the foot of the **Shivaliks**; formed on the **Sukhna Choe** ("choe" = seasonal torrent of the Shivalik foothills)
Sauj Jheel	Designated a Ramsar site	Near Kishni, **Mainpuri (UP)**; Indo-Gangetic floodplain; close to **Saman Bird Sanctuary**
Kigali	10 years of the Kigali Amendment	Capital of **Rwanda** (landlocked, East Africa; "land of a thousand hills")
Montreal	Montreal Protocol (1987)	Quebec, **Canada**; also hosts the **Multilateral Fund** Secretariat and ICAO HQ
Ramsar	Wetland Convention (1971)	City in **Iran** on the **Caspian Sea** coast
Kanpur tannery belt	Hexavalent chromium in UP groundwater	Leather cluster on the **Ganga**; Rania–Khan Chandpur (Kanpur Dehat) chromium dumps are a long-running NGT matter

🦅 Species in News

Species	IUCN	Key Facts
Sarus Crane *(Grus antigone)*	Vulnerable	**Tallest flying bird**; **State bird of UP**; Schedule I (WPA); found at Sauj Jheel
Pallas's Fish Eagle	Endangered	Large raptor of rivers and lakes in Central and South Asia; recorded at Sukhna
Black Pond Turtle *(Geoclemys hamiltonii)*	Endangered	Spotted freshwater turtle of the Indus–Ganga–Brahmaputra plains; heavily trafficked; CITES Appendix I
Common Pochard	Vulnerable	Migratory diving duck; winters in North India via the Central Asian Flyway
Greater Spotted Eagle	Vulnerable	Migratory eagle that winters in wetlands of the northern plains
Sacred Lotus *(Nelumbo nucifera)*	—	**National flower of India**; provides nesting cover in Sauj Jheel

🏛️ Organisations & Institutions

Body	Key Facts
CERT-In	2004; MeitY; Sec. 70B IT Act; nodal agency for cyber incidents; exempt from RTI (Second Schedule)
NCIIPC	Sec. 70A IT Act; protects Critical Information Infrastructure; under NTRO
NMCG	National Mission for Clean Ganga (2011, registered society); implements **Namami Gange** (2014); Ministry of Jal Shakti
Institute of Chinese Studies	New Delhi think-tank on China and East Asia
UNEP Ozone Secretariat	Nairobi, Kenya; secretariat for the Vienna Convention and Montreal Protocol
Multilateral Fund	Created under the London Amendment (1990); funds developing countries' compliance with the Montreal Protocol
Ramsar Secretariat	Gland, Switzerland (shares premises with IUCN)
MOFCOM (China)	China's Ministry of Commerce; co-issued Announcement No. 48

📘 Terms & Concepts

Term	Meaning
AI agent / Agentic AI	AI that plans and takes actions on its own (runs code, browses, uses tools) to reach a goal, instead of only replying to prompts
Permissive cloud role	A cloud identity given more access than it needs; violates the principle of **least privilege**
Polysilicon	High-purity silicon, the first stage of the solar PV value chain
Perovskite / Tandem cell	ABX_3-structure solar material; tandem = perovskite layered on silicon for higher efficiency
Hexavalent chromium	Cr(VI); toxic, carcinogenic, mobile in groundwater
Suo motu	"On its own motion" — action taken by a court or tribunal without a formal petition
GWP / SLCP	Global Warming Potential (CO_2 = 1) / Short-Lived Climate Pollutants: HFCs, methane, black carbon, tropospheric ozone
IBA	Important Bird & Biodiversity Area, identified by **BirdLife International** (BNHS in India)
Central Asian Flyway	Migratory bird route from the Arctic and Siberia to the Indian subcontinent; India hosted **CMS COP-13** (Gandhinagar, 2020)
Ecotone	Transition zone between two ecosystems (e.g., marsh between open water and land); usually species-rich (**edge effect**)
Commissioning	Formal induction of a warship into active naval service

📅 Important Days & Dates

Date	Significance
16 September	World Ozone Day (Montreal Protocol signed, 1987)
15 Oct 2016	Kigali Amendment adopted; in force **1 Jan 2019**
18 Oct 2010	National Green Tribunal established
2 February	World Wetlands Day (Ramsar Convention, 1971)
1 Jan 2027	Qualifying date for the special summary revision of electoral rolls
25 January	National Voters' Day (ECI founded on 25 Jan 1950)

10 Practice Zone — Prelims MCQs & Mains Questions

Practice

Q1. Consider the following statements about the Kigali Amendment:

1. It amends the Montreal Protocol to phase down HFCs, which are major ozone-depleting substances.
2. It entered into force on 1 January 2019.
3. India must freeze HFC consumption by 2028.

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

Q2. Which of the following Acts are listed in Schedule I of the National Green Tribunal Act, 2010?

1. Wildlife (Protection) Act, 1972
2. Biological Diversity Act, 2002
3. Public Liability Insurance Act, 1991
4. Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

(a) 1 and 4 only (b) 2 and 3 only (c) 1, 2 and 3 only (d) 1, 2, 3 and 4

Q3. Consider the following pairs (Ramsar site — Location):

1. Sukhna Wetland — Foothills of the Shivalik range
2. Sauj Jheel — Mainpuri district
3. Saman Bird Sanctuary — Etawah district

How many of the pairs given above are correctly matched?

(a) Only one (b) Only two (c) All three (d) None

Q4. With reference to CERT-In, consider the following statements:

1. It is the national agency for cyber incident response under Section 70B of the IT Act, 2000.
2. It functions under the Ministry of Home Affairs.
3. Its 2022 Directions require cyber incidents to be reported within 6 hours.

Which of the statements given above are correct?

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

Q5. Consider the following statements about the Budapest Convention:

1. It is the first international treaty on crimes committed via the Internet.
2. India ratified it in 2018.
3. It entered into force in 2004.

Which of the statements given above are correct?

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

Q6. Arrange the stages of the crystalline-silicon solar PV value chain in the correct order:

1. Wafer
2. Polysilicon
3. Module
4. Ingot
5. Cell

(a) 2-4-1-5-3 (b) 2-1-4-5-3 (c) 4-2-1-5-3 (d) 2-4-5-1-3

Q7. With reference to perovskite solar cells, consider the following statements:

1. "Perovskite" refers to a crystal structure named after the mineral calcium titanate.
2. In tandem cells, a perovskite layer is stacked on silicon to capture a wider part of the solar spectrum.
3. Perovskite cells currently dominate the global commercial solar module market.

Which of the statements given above are correct?

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

Q8. Consider the following statements about hexavalent chromium [Cr(VI)]:

1. It is more toxic and more mobile in groundwater than trivalent chromium [Cr(III)].
2. It is classified as a Group 1 carcinogen by IARC.
3. Oxidising Cr(III) to Cr(VI) is a standard remediation method.

Which of the statements given above are correct?

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

Q9. Consider the following statements:

1. The Representation of the People Act, 1950 now provides four qualifying dates in a year for enrolment.
2. Form 7 is used to apply for inclusion of a new elector.
3. Under the CEC and Other ECs Act, 2023, the Chief Justice of India is a member of the selection committee.

Which of the statements given above is/are correct?

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

Q10. Consider the following statements:

1. INS *Samarthak* was built by Mazagon Dock Shipbuilders Ltd.
2. Karwar is home to the naval base INS Kadamba, developed under Project Seabird.
3. Commissioning of a warship marks its formal induction into active service.

Which of the statements given above are correct?

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

✅ Answer Key with Explanations

Q	Ans	Explanation
1	(b)	HFCs do **not** deplete ozone — they are greenhouse gases, which is why they were brought under Kigali. It came into force on 1 Jan 2019. India (Group 2) freezes in 2028.
2	(b)	The Wildlife (Protection) Act and the Forest Rights Act are **not** among the seven Schedule I Acts.
3	(b)	Saman Bird Sanctuary is in **Mainpuri**, not Etawah. Pairs 1 and 2 are correct.
4	(c)	CERT-In works under **MeitY**. The I4C is under the MHA.
5	(b)	India is **not** a party to the Budapest Convention. It was opened for signature in 2001 and entered into force in 2004.
6	(a)	Polysilicon → Ingot → Wafer → Cell → Module.
7	(a)	Crystalline silicon still dominates the commercial market; perovskites are an emerging technology, which is why China wants to protect its lead.
8	(a)	Remediation **reduces** Cr(VI) to the less toxic Cr(III); oxidising would make it worse.
9	(a)	Form 6 is for new enrolment; Form 7 is for objection/deletion. The 2023 Act replaced the CJI with a Union Cabinet Minister on the selection committee.
10	(b)	INS *Samarthak* was built by **Larsen & Toubro**, a private shipbuilder.

✍️ Mains Practice

Q1. China's new export controls on next-generation solar and AI technologies show the limits of assembly-led manufacturing. Examine their implications for India's clean-energy goals and suggest measures for technological self-reliance. **(GS 3 · 12 marks · 200 words)**

Answer pointers: Intro — Announcement No. 48: 14 prohibited and 26 restricted technologies, including perovskite/tandem cells and large-scale polysilicon. **Implications** — India strong in modules but weak upstream (polysilicon, wafers, cells); licensing delays; slower access to next-generation efficiency; risk to the 500 GW non-fossil target and ALMM List-II timelines; export controls used as leverage (earlier: gallium, germanium, graphite, rare earths). **Measures** — PLI focused on upstream integration; R&D missions for perovskite/tandem cells (IITs, NISE); partnerships with the US, EU, Japan and Australia (iCET/TRUST, Quad, Minerals Security Partnership); equipment-making ecosystem; skilling; recycling of solar waste. **Conclusion** — move from "Make in India" to "Innovate in India".

Q2. "Agentic AI has changed the economics of cyber-attacks." In the light of CERT-In's recent disclosure, discuss the challenges this poses and suggest reforms to India's cyber-security framework. **(GS 3 · 8 marks · 150 words)**

Answer pointers: Challenges — known ("conventional") flaws found and exploited at machine speed and scale; exposed credentials, public repositories and over-broad cloud roles; organisations unable to detect intrusions; responsibility of AI developers testing on live systems; little transparency (RTI exemption). **Reforms** — mandatory cyber-hygiene audits and least-privilege access; secret scanning in code; AI-assisted defence; norms for AI providers on testing and disclosure; link CERT-In reporting with the DPDP breach regime; capacity building in MSMEs and government bodies; international cooperation (UN Cybercrime Convention). **Conclusion** — defence must be as fast as the offence.