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Freshwater Native
Fish of Odisha



Sponge Iron



Microplastics in
Bhitarkanika
(Odisha)



L&T to develop Coal-to-Ammonium
Nitrate Project in Odisha



ShaktiShree App
for Higher Education
in Odisha

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COMPREHENSIVE COVERAGE OF CURRENT AFFAIRS FOR ODISHA STATE CIVIL SERVICES EXAMS



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SYLLABUS: CURRENT EVENTS OF NATIONAL AND INTERNATIONAL IMPORTANCE: TO BE READ FROM THE IAS GAZETTE: COVERS - POLITY, GOVERNMENT SCHEMES, SCIENCE AND TECHNOLOGY, ECONOMY, SECURITY, INTERNATIONAL RELATIONS, SECURITY, GEOGRAPHY, SOCIETY, ENVIRONMENT AND ECOLOGY

ODISHA RELATED NEWS

Freshwater Native Fish of Odisha

Context

- A recent article emphasises that **ecological wisdom and governance (Panchayati Raj)** must work together to conserve Odisha's freshwater fish diversity, which is declining due to multiple anthropogenic pressures.

Key Highlights

- Odisha has **186 freshwater fish species**, including **48 endemic species**.
- These support **food security, livelihoods, culture, ecosystem functioning**.
- Decline due to **habitat loss, pollution, overfishing, invasive species, weak governance**.

Global & National Context

- Freshwater species = **>25% of all vertebrates**, but occupy **<1% of Earth's surface**.
- Freshwater ecosystems are disappearing **3 times faster than forests**.
- As per **International Union for Conservation of Nature Red List**,
 - **24% freshwater species** (fish, dragonflies, damselflies, crabs, crayfish, shrimp) face high extinction risk.

India (Zoological Survey of India, 2024 - Fauna)

- Total fish species: **3,523**.
- Genera: 1,097. Families: 272. Orders: 55.
- Endemic: **664**.
- Threatened: **291** (38 CR, 105 EN, 148 VU).
- High endemism: **Western Ghats, Northeast India**.

State-wise Threatened Fish

- Kerala (129), Tamil Nadu (121), Karnataka (96) andaman & Nicobar (94) andhra Pradesh (83), Gujarat (66), **Odisha (64)**, West Bengal (60).

Odisha: Resource Base & Fisheries

Water Resources

- Freshwater area: **707,000 hectares**.

Waterbodies Census (April 2023, Jal Shakti)

- India: **2.42 million**, 97.1% rural.
- Odisha: **181,837 (7.5%)**.

- Rank: **4th ponds, 2nd tanks, 5th lakes, 4th reservoirs**.

Fish Production

- Rank: **4th total production** (after Andhra Pradesh, West Bengal, Karnataka).
- Rank: **5th inland production**.
- Production:
 - 2019–20: 543,000 tonnes.
 - 2023–24: 734,000 tonnes.

Consumption

- **94.75% population consumes fish** (NFHS-5).
- Per capita consumption:
 - 7.71 kg (2000–01), 18.33 kg (2023–24).
- National average: **8.89 kg**.
- Odisha = **one of highest fish-consuming populations**.

Ecology & Habitat Diversity

- Systems: rivers, estuaries, floodplain wetlands, reservoirs, tanks, canals, hill streams.
- Key rivers: **Mahanadi, Saberi**.
- Dominant family: **Cyprinidae**.

Ecological Features

- Large **cyprinids, catfishes, clupeids** migrate and spawn.
- Hill streams (Eastern Ghats):
 - Rheophilic species: *Garra*, *Schistura*, *hillstream loaches*.
- **Seasonal floods connect rivers-estuaries**, enabling spawning.
- Monsoon creates a **"living laboratory of movement and adaptation"**.

Ecosystem Role

- Nutrient cycling, insect control, waterbody health.
- Support inland and coastal fisheries.

Threats

1. **Habitat fragmentation**, dams, barrages, water diversion, altered flow, blocked migration routes (esp. clupeids, carps).
2. **Pollution**, agricultural runoff, industrial effluents, urban waste, prawn farm discharge.
3. **Overfishing**, non-selective gears, push nets, illegal practices, juvenile catch.

4. **Invasive/exotic species**, competition, predation.
5. **Nearly all native species facing threat** (as per article context).

Governance & Institutional Issues

- Only **732 fishery cooperative societies**.
- Panchayati Raj intended for local resource management, but weakened due to **political pressures**.

Problems

- Leasing of tanks, wetlands, river stretches for **quick revenue**.
- Indiscriminate **exotic stocking**, year-round harvesting.
- Poor enforcement of:
 - **Monsoon fishing bans**,
 - **Mesh-size regulations**.
- Fragmented governance: Fisheries, Irrigation, Revenue departments act separately.
- **Gram Sabhas rarely consulted** (barrages, sand mining, aquaculture approvals).

Consequences

- Declining native fish stocks.
- Siltation of wetlands.
- Water quality degradation.
- Replacement of native carps and catfishes by exotics.
- Ecological costs externalised to communities.

Conservation Pathways

Governance Reforms

- Legally empower **Gram Sabhas**, approve/veto leases.
- Ensure transparent bidding, ecological safeguards.

Sustainable Leasing

- Limit exotic stocking, promote native seed.
- Introduce **resting periods** (no fishing phases).

Odisha Land Records Reforms (2025–26)

Context

- The Government of Odisha has launched major **land governance and digital reforms** to improve transparency, accessibility and efficiency in land administration.

Key Highlights

- **58,09,722 land records corrected** out of 62,25,502 surveyed records, about **93% completion**.
- Focus on **citizen-centric governance**, simplification, transparency.
- Review led by Suresh Pujari at Lok Seva Bhawan, Bhubaneswar.

Institutional Integration

- Convergence: Panchayati Raj + Fisheries + Water Resources.
- Village-level integrated water management plans.

Community Monitoring

- Train youth, fisher cooperatives.
- Monitor water quality, spawning grounds, fish diversity.
- Integrate findings into Gram Sabha reviews.

Incentives

- Reward conservation-oriented Panchayats.
- Grants for enforcing closed seasons, protecting habitats.

Habitat Protection

- Ban fish farming in:
 - Deity ponds,
 - Common village ponds.
- Maintain **stable monsoon breeding ecosystems**.

Pollution Control & Ecosystem Revival

- Address industrial, domestic, municipal waste.
- Control prawn farm pollution.
- Prioritise **river and lake revitalisation**.

Key Takeaways

- Odisha's freshwater fish diversity = **rich, diverse, ecologically vital**.
- Includes **food fish, ornamental species, endemic taxa, habitat specialists**.
- Conservation requires:
 - **Connectivity restoration**,
 - **Pollution reduction**,
 - **Community-based governance**,
 - **Monitoring endemic species**.
- Panchayati Raj must act as a **bridge between ecological wisdom and local governance**.
- Conservation = **food security + livelihoods + cultural heritage + ecosystem sustainability**.

Administrative & Service Reforms

- **108 new Sub-Registration Offices** opened in 2025–26.
- **Online land demarcation services** introduced.
- New **mobile app** used for updating Column-2 of Record of Rights (RoR).

Digital Governance Initiatives

- **Ama Sathi WhatsApp chatbot** provides **11 revenue services**.
- **e-Registration Odisha app** enables:
 - Slot booking for registration.

- Encumbrance Certificates (EC).
- Certified Copies (CC).

Land Record Simplification

- **Kisams reduced** from 7,797 to **22 categories**.
- **Satwa types reduced** from 750 to **4 categories**:
 - Raiyati / Stitiban.
 - Pattadar.
 - Dharmanusthan.
 - Amrutmanohi.

Legal & Policy Reforms

- **MSMEs and startups exempted** from Change of Land Use (CLU) permission.
- **New transfer policy** for OAS and ORS officers to improve administration.

Property Registration Reforms

- Apartment registration simplified:
 - Associations pay **₹50,000 flat stamp duty** for common areas.
 - **5% stamp duty** on undivided share during individual sale.

Microplastics in Bhitarkanika (Odisha)

Context

- A study reports **microplastic contamination** in Bhitarkanika National Park, India's **second-largest mangrove ecosystem**, raising ecological and policy concerns.

Key Findings

- **All 20 sampled sites** along Brahmani River tested **positive for microplastics**.
- Maximum concentration, **~50.4 particles/kg sediment**.
- **89% particles = fibres**, mainly from textiles and fishing nets.
- Dominant polymers, **polyamide (highest), polyethylene, polypropylene**.
- Mangroves trap more particles than open rivers, acting as **long-term pollution sinks**.

What are Microplastics

- Plastic particles **<5 mm**.
- Formed from breakdown of **bags, bottles, fishing nets, synthetic clothes**.
- Do not biodegrade, only fragment.

Linguistic Standardisation

- Correction of **English spellings** of 57 place names to reflect **Odia pronunciation**.
- Public participation invited.

Welfare & Land Distribution

- Under Odisha Right to Public Services Act:
 - **>1 crore services delivered**.
- Land pattas given to **25,643 educational institutions**.
- Under Vasundhara Scheme:
 - **28,531 landless families** received **4 decimals homestead land each**.

Religious Land Protection

- Creation of **Shri Jagannath Land Cell**.
- Objective, protect land belonging to Lord Jagannath.

Significance

- Enhances **transparency, efficiency, ease of doing business**.
- Promotes **digital governance and service delivery**.
- Supports **MSMEs, startups, housing sector**.
- Ensures **social justice via land distribution**.
- Protects **religious and institutional land assets**.

- Example, a **polyester shirt** releases thousands of **fibres per wash**.

Toxicity & Food Chain Impact

- Microplastics carry **heavy metals**, chromium, copper, zinc, arsenic, cadmium, barium, lead.
- Plastics act as **vectors of toxins**, due to high surface area.
- Enter food chain via **benthic organisms** → **fish** → **humans**.

Ecological Risk

- Overall pollution level **moderate** compared to **urban coasts**.
- However, **ecological risk = high to extreme** at several sites.
- Reason, **polyamide has higher hazard index**.
- Key point, **quality (toxicity) > quantity**.

Sources of Pollution

- Upstream activities along Brahmani basin,
 - Agriculture runoff,
 - Small industries,
 - Urban sewage,

- Fishing activities.
- Rivers transport pollution, **sanctuaries are not isolated systems.**

Ecological Importance of Bhitarkanika

- Habitat for,
 - Saltwater crocodile (largest in India),
 - Olive Ridley turtles,
 - Mangrove ecosystem biodiversity.
- Mangrove roots act as,
 - Coastal protectors,
 - **Filters + sinks for microplastics.**

Policy Implications

- Need **basin-level management**, not just sanctuary protection.
- Microplastics data provides **baseline for early action.**
- Prevention is **cheaper than restoration.**

Suggested Measures

- Wastewater treatment in upstream towns.
- Stricter industrial discharge norms.
- Filters in washing machines, community laundries.
- Collection systems for discarded fishing nets.
- Include microplastics in **Environmental Impact Assessment (EIA).**
- Regular monitoring every **1-2 years**, multi-agency coordination.

Conclusion

- Bhitarkanika is **not yet critically polluted**, but risk is rising.
- Urgent action needed to prevent degradation.
- Conservation requires **river basin approach + pollution control + monitoring.**

Bhitarkanika National Park

Bhitarkanika National Park is a **mangrove ecosystem** located in **Odisha**, spread over about **672 sq km** and is the **second-largest mangrove forest in India**. It is formed by the confluence of rivers like **Brahmani, Baitarani, Dhamra and Patasala**, creating a unique **estuarine wetland system** rich in **biodiversity**. The park is famous for being a major habitat of the **Saltwater Crocodile**, along with rare species like **Kingfishers** and other **migratory birds**. It is also adjacent to the **Gahirmatha Beach**, the world's largest nesting site of **Olive Ridley Turtles**, making it a crucial **conservation hotspot**.

SUJALA Scheme for Urban Drinking Water Supply in Odisha

Context

- The Government of **Odisha** has expanded the SUJALA programme to ensure **24×7 piped drinking water supply** to all urban households through large-scale infrastructure development.

Key Features

- Total allocation: **₹1,500 crore for the financial year 2026-27.**
- Objective: Provide **continuous safe drinking water directly to households**, removing the need for storage or boiling.
- Coverage: **86 Urban Local Bodies across Odisha.**
- Beneficiaries: Around **31.5 lakh urban residents.**
- Current urban water demand: **452 million litres per day.**

Implementation Plan

- Structured **three-year phased expansion programme.**
- In 2026-27: **38 Urban Local Bodies will be added.**
- In 2027-28: **another 38 Urban Local Bodies will be added.**

- Earlier phase: **9 Urban Local Bodies already included.**
- Focus areas: **modernisation of water systems, reduction of leakage and improved service delivery.**

Sustainability Measures

- Promotion of **alternative sources of water.**
- Efficient use of treated water.
- Citizens advised not to use drinking water for non-essential purposes such as: Gardening, Washing vehicles, Construction activities.

Significance

- Strengthens **urban drinking water security in Odisha.**
- Supports **rapid urbanisation and population growth.**
- Promotes **sustainable and responsible water use.**
- Improves **public health and quality of life.**
- Part of the broader **"Drink from Tap"** initiative.

Supreme Court Strikes Down Caste-Based Bail Conditions in Odisha

Context

- The Supreme Court of India intervened in a suo motu case after media reports revealed that courts in Odisha were imposing **manual scavenging and cleaning duties as bail conditions** on accused persons belonging to Dalit and Adivasi communities.

Key Judgment

- The Supreme Court declared such bail conditions **“null and void”**.
- The Court strongly disapproved of these directives, calling them **regressive, unconstitutional and reflecting a colonial mindset**.
- Bench: **Chief Justice of India Surya Kant and Justice Joymalya Bagchi**.

Nature of Challenged Orders

- At least **50 such orders** passed by a single judge of the Odisha High Court between April–September 2025.
- Accused persons were asked to clean: Police stations, temples, hospitals, village roads, bank premises.

Examples:

- Temple theft accused → ordered to clean temple.
- Loan default accused → ordered to clean bank branch.

Supreme Court Observations

- Such conditions violate **human dignity and presumption of innocence**.
- These were described as **“caste-coloured” orders showing bias against marginalised communities**.
- No similar conditions were imposed on privileged accused persons.
- Such practices reflect **hidden caste discrimination in judicial orders**.

Mahanadi Water Allocation between Odisha and Chhattisgarh

Context

- The Joint Technical Committee has finalised water availability and yield figures for the **Mahanadi river basin**, shared between **Odisha and Chhattisgarh** and submitted them to the Mahanadi Water Disputes Tribunal.

Key Findings

State-wise Water Availability

- The Court termed them **cruel, abhorrent and unknown to law**.

Legal Position

- No statutory provision allows **community service as a bail condition**.
- Community service exists only as a **punishment after conviction**, not before trial.
- Bail conditions must not become **punitive in nature**.

Constitutional Concerns

- Violation of **right to equality and dignity**.
- Undermines the goal of a **casteless and equal society after 75 years of Constitution**.
- Judicial orders must protect citizens from **state power misuse**.

Directions Issued

- All such bail conditions in Odisha are to be **removed immediately**.
- No replacement with similar or harsh conditions.
- All affected persons to **continue on bail without such obligations**.
- Supreme Court Registry to circulate order to all High Courts.
- High Courts to ensure circulation to all judicial officers.
- Such practices must be completely eradicated to avoid **social friction**.

Significance

- Reinforces **constitutional morality and human dignity**.
- Prevents **caste-based discrimination in judicial practice**.
- Strengthens **fairness in bail jurisprudence**.
- Ensures alignment of lower courts with **constitutional equality framework**.

- Odisha: **33.17 million acre feet**

- Chhattisgarh: **28.94 million acre feet**

Odisha has **higher water availability and yield** compared to Chhattisgarh.

Basin Coverage

- Figures include entire **Mahanadi basin**, including:
 - Western catchment area
 - Chilika water body

Dependability-Based Availability

Total average availability: **62.36 million acre feet**

- 50% dependability: **61.12 million acre feet**
- 70% dependability: **46.62 million acre feet**
- 90% dependability: **37.25 million acre feet**

Indicates expected river flow frequency under different climatic conditions.

Yield Assessment

- Average total yield up to sea: **62.36 million acre feet**
- Excludes: Western catchment and Chilika water body
- Based on time series data from **1980–81 to 2018–19**
- Used to calculate:
 - Average annual yield
 - 75% dependable yield
 - 50% dependable yield

Meaning: yield expected to occur in 75% or 50% of years.

Tribunal Observations

- Proceedings submitted to **Mahanadi Water Disputes Tribunal**.
- Data approved by Chief Ministers of both states:
 - Odisha Chief Minister Mohan Charan Majhi
 - Chhattisgarh Chief Minister Vishnu Deo Sai
- Tribunal appreciated **cooperation and intent to resolve long-standing dispute**.

Significance

- Mahanadi is a **lifeline river for Odisha and Chhattisgarh**.
- Provides basis for **inter-state water sharing framework**.
- Supports agriculture, fisheries, drinking water and ecosystem needs.
- Marks progress in **scientific and negotiated dispute resolution**.

Mahanadi River

The **Mahanadi River** is a major river of **East-Central India**, originating near **Sihawa Hills (Chhattisgarh)** and flowing about **900 km** through **Chhattisgarh and Odisha** before draining into the **Bay of Bengal**. It covers a vast basin of **~132,100 sq km** and is fed by tributaries like **Hasdeo, Shivnath, Ib, Ong and Tel**. A key feature is the **Hirakud Dam**, the first major **multipurpose river valley project of independent India**, which has created the **largest artificial lake in Asia**. The river is known for its **fertile delta, intensive agriculture and historical trade centres like Cuttack and Sambalpur**, but also for its past **flood vulnerability**, earning it the title "**Sorrow of Odisha**." Today, it remains vital for **irrigation, hydropower and regional livelihoods**.

ShaktiShree App for Higher Education in Odisha

Context

- The Government of **Odisha** launched the **ShaktiShree mobile application** along with internship guidelines to strengthen higher education and align it with the **National Education Policy 2020**.

ShaktiShree App Features

- Designed to support **girl students in higher education institutions**.
- Provides **24×7 SOS emergency alerts**.
- Enables **anonymous reporting of harassment**.
- Offers **mental health support services**.
- Connects students with **Internal Complaints Committees of institutions**.

Internship Guidelines

- Released alongside the app.
- Aim: **industry-ready students through practical exposure**.
- Focus areas:
 - Internships,
 - Community engagement,
 - Skill-based learning.

- Internships,
- Community engagement,
- Skill-based learning.
- Aligned with **National Education Policy 2020**.

Key Objectives of Initiative

- Strengthen **safety and accessibility in higher education**.
- Bridge gap between **academics and industry requirements**.
- Promote **skill development and innovation**.
- Improve **Gross Enrolment Ratio in higher education**.
- Encourage **multidisciplinary education and collaboration**.

Significance

- Strengthens **women's safety in educational institutions**.
- Enhances **student welfare and grievance redressal system**.

- Promotes **industry-academia linkage**.

- Supports **modern, skill-oriented education system** in Odisha.

Odisha Unveils Ambitious Policy to Promote Reuse of Treated Urban Water

Context

- The Government of Odisha has notified the **Policy on Reuse of Treated Used Water of Urban Odisha, 2026**, aiming to promote **reuse of treated wastewater** in urban areas and strengthen **water security, sustainability and climate resilience**.

Policy Overview

- Notified by the **Housing and Urban Development Department of Odisha**.
- Focus: Promotion of **reuse of treated urban wastewater**.
- Objective: Address **urban water stress**, improve **resource efficiency** and support **circular economy principles**.
- Aims to integrate **sustainable water management with urban planning**.

Key Objectives and Targets

- Achieve **100 percent collection, conveyance and treatment of wastewater by 2030**.
- Ensure at least **20 percent reuse of treated wastewater by 2030**.
- Promote **efficient water use and recycling systems** in urban areas.

Permitted Uses of Treated Water

- **Industrial purposes**
- **Landscaping and gardening**
- **Construction activities**
- **Other non-potable urban uses**
- Aim: Reduce dependence on **freshwater sources**.

Odisha Restricts Transfer and Registration of Old Out-of-State Commercial Vehicles

Context

- The Government of Odisha has imposed restrictions on the **registration and ownership transfer of old commercial vehicles from other states**, aimed at improving **road safety, transport regulation and environmental standards**.

Key Provision

- Issued by the **State Transport Authority of Odisha**.
- Bars **registration and ownership transfer** of certain commercial vehicles in Odisha.

Implementation Framework

- Applies to all **Urban Local Bodies (ULBs)** in Odisha.
- Time-bound targets for improving **wastewater treatment infrastructure**.
- Focus on **upgradation of sewage collection and treatment systems**.
- Encourages integration of **reuse systems in urban infrastructure planning**.

Expected Outcomes

- Strengthening of **urban water security**.
- Reduction in **freshwater stress and over-extraction**.
- Improved **environmental sustainability and pollution control**.
- Creation of **new economic opportunities in water recycling sector**.
- Promotion of Odisha as a model for **climate-resilient urban development**.

Significance

- One of the most **comprehensive urban water reuse policies in India**.
- Aligns with **climate resilience and sustainable development goals**.
- Supports transition toward a **circular water economy**.
- Positions Odisha as a leader in **sustainable urban governance and innovation in water management**.

Applicability

- Applies to **commercial buses and taxis (stage and contract carriers)**.
- Covers vehicles that are:
 - **More than 10 years old**
 - **Registered in other states**

Restrictions Imposed

- No **new registration** of such vehicles in Odisha.
- No **ownership transfer** permitted.
- No acceptance of **tax or related administrative updates** for these vehicles.

Exceptions

- Does not apply to:
 - Vehicles already registered in Odisha before the order.
 - Private vehicles.
 - Goods vehicles such as trucks.
- Old commercial vehicles from other states can still pass through Odisha and use highways.

Objectives

- Improve road safety standards.
- Remove unfit and over-aged commercial vehicles from active service.
- Reduce vehicular pollution.
- Strengthen public transport safety and reliability.

Odisha Launches Country's First Advanced Three-Dimensional Semiconductor Packaging Unit in Bhubaneswar

Context

- The foundation stone for India's first advanced **three-dimensional semiconductor packaging unit** was laid at **Information Technology Investment Region, Bhubaneswar**, marking a major step in strengthening India's semiconductor ecosystem and promoting high-end electronics manufacturing.

Project Overview

- Developed by **3D Glass Solutions**.
- Part of the broader **India Semiconductor Mission** aimed at reducing import dependence in electronics and chips.

Key Objectives

- Strengthen **domestic semiconductor manufacturing ecosystem**.
- Support **artificial intelligence, machine learning, fifth-generation communication technology, high-performance computing, aerospace and defence sectors**.
- Promote **self-reliance in electronics production under Atmanirbhar Bharat vision**.

Technological Significance

- Focus on **advanced three-dimensional chip packaging technology**.

- Support **transport system regulation and compliance**.

Implementation

- Regional Transport Officers instructed to ensure strict enforcement.
- Includes monitoring of **registration, ownership transfer and tax compliance systems**.

Significance

- Enhances **vehicle fitness governance in Odisha**.
- Supports **cleaner and safer transport ecosystem**.
- Aligns with goals of **sustainable mobility and environmental protection**.

- Critical for **next-generation computing systems and miniaturised electronic devices**.
- Enhances India's position in **global semiconductor value chains**.

Investment and Production Capacity

- Total investment of approximately **₹2,000 crore**.
- Expected output of around **70,000 glass panels annually**.
- Production of **millions of semiconductor components**.
- Commercial production expected by **2028**, with full-scale operations by **2030**.

Employment Generation

- Expected to create jobs for **engineers, diploma holders and skilled technicians**.
- Supports Odisha's transition into a **technology-driven industrial economy**.

Significance for Odisha

- Positions Odisha as an emerging **electronics and semiconductor hub**.
- Expands state economy beyond **mining and minerals into high-technology manufacturing**.
- Strengthens Odisha's role in India's **digital and industrial transformation**.

India Semiconductor Mission (ISM)

The **India Semiconductor Mission (ISM)** is a government initiative launched in **2021** with an outlay of **₹76,000 crore** to develop India's **semiconductor and display manufacturing ecosystem** and strengthen its integration into **global electronics value chains**.

Implemented under the **Ministry of Electronics and Information Technology (MeitY)**, the mission supports setting up **semiconductor fabrication (fabs), display manufacturing units, chip design startups and testing facilities**, while also promoting **skill development and global investment in India**. Key schemes under ISM include the **Semiconductor Fabs Scheme (up to 50% financial support), Display Fabs Scheme and Design Linked Incentive (DLI) Scheme** for startups and MSMEs.

The mission is significant as India's semiconductor market is expected to reach **\$100-110 billion by 2030**, helping reduce dependence on countries like **Taiwan, China and the USA** and strengthening India's position in the **global high-tech manufacturing supply chain**.

India Semiconductor Mission (ISM) 2.0

The **India Semiconductor Mission (ISM) 2.0** is a **Budget 2026-27 initiative** aimed at strengthening India's position in the **global semiconductor value chain**, with a focus shifting from ecosystem creation to **technological advancement and global integration**. With a provision of **₹1,000 crore (FY 2026-27)**, it builds on ISM 1.0 (2021), which had already approved **10 projects worth ₹1.60 lakh crore across 6 states**. ISM 2.0 focuses on **indigenous manufacturing of semiconductor equipment and materials**, development of **full-stack Indian IP**, strengthening **R&D and skill centres** and improving **supply chain resilience** amid global uncertainties.

India's semiconductor market, currently valued at around **\$45-50 billion (2024-25)**, is projected to reach **\$100-110 billion by 2030**, with ambitions for **70-75% self-sufficiency by 2029** and advanced chip production capabilities like **3 nm and 2 nm by 2035**.

The mission is supported by initiatives such as the **Design Linked Incentive (DLI) Scheme, Digital India RISC-V Programme, Chips to Startup Programme** and development of indigenous processors like **DHRUV64**, collectively aimed at boosting **innovation, manufacturing capacity and high-tech employment in India**.

Sponge Iron

Context

- Three workers died at a sponge iron factory in Odisha's Angul district.

About Sponge Iron (Direct Reduced Iron)

- **Sponge iron (Direct Reduced Iron - DRI)** is a **high-purity metallurgical iron** used in steelmaking.
- It is produced by **direct reduction of iron ore (lumps, pellets, or fines)**.
- The process uses **reducing gases such as carbon monoxide and hydrogen**, or carbon monoxide derived from **coal or natural gas**.
- Production takes place at high temperatures of around **1000-1200°C**.
- Oxygen is removed from iron ore, resulting in a **porous, sponge-like structure** with high iron content.

Key Characteristics

- Contains around **90 percent or more iron content**.
- Has **low impurities such as sulfur and phosphorus**.

- **Lightweight and porous structure** resembling a sponge.

Uses in Industry

- Mainly used as a **substitute for scrap iron**.
- Utilised in **electric arc furnaces and induction furnaces**.
- Helps produce **high-quality steel** in secondary steelmaking units.

India's Position in Sponge Iron Production

- India is the **largest producer of sponge iron in the world**.
- Contributes around **30 percent of steel production through the DRI route**.

Challenges in the Sector

- **Shortage of iron ore supply** affecting production.
- **Rising exports of iron ore** impacting domestic availability.
- Leads to **reduced capacity utilisation** in sponge iron plants.

- Results in **increased production costs** for steel

manufacturers.

Odisha Law Commission proposes up to 7-Year Jail for Repeat Hate Speech

Context

- The Odisha State Law Commission (OSLC) has submitted recommendations for the **Odisha Hate Speech and Hate Crimes (Prevention) Act, 2026**, proposing strict penalties including up to **7 years imprisonment** and classification of offences as **cognisable and non-bailable**.

Punishment Structure

- **First offence:** Minimum **1 year imprisonment**, extendable up to **5 years**, plus **₹10,000 fine**.
- **Repeat offence:** Minimum **2 years**, extendable up to **7 years**, plus fine up to **₹50,000**.
- Offences classified as **cognisable and non-bailable** (arrest without warrant allowed).
- Trial to be conducted by **Judicial Magistrate First Class (JMFC)**.
- Courts empowered to grant **victim compensation** based on harm caused.

Definition of Hate Speech & Hate Crime

- Covers **spoken words, written content, signs, visual representation, electronic communication**.
- Includes expression intended to create **hatred, hostility, disharmony**.
- Grounds include **religion, caste, race, gender, language, disability, place of birth**.

Odisha launches OADMP to Climate-Proof Agriculture and Build Drought Resilience (2026)

Context

- The **Odisha Agriculture Drought Mitigation Programme (OADMP)** was launched under the **National Drought Mitigation Programme (NDMP)** framework during **Krushis Odisha 2026 (26 Jan 2026)** to climate-proof Odisha's agriculture system through a coordinated, science-led approach.

Objective

- **Climate-proof agriculture** in Odisha by enhancing resilience to drought and climate variability.
- Improve **productivity**, stabilise yields and promote **crop diversification**.
- Strengthen **rural livelihoods** and reduce agrarian distress.

- Explicit inclusion of **online/digital communication platforms**.
- **Hate crime** includes **promoting, propagating, or abetting hate speech** and organised campaigns.

Preventive Powers & Enforcement

- **Executive Magistrates / Police officers (DSP rank and above)** empowered for preventive action.
- Can act under **Bharatiya Nagarik Suraksha Sanhita (BNSS)** for maintaining public order.
- Action permissible based on **credible intelligence before violence occurs**.

Digital Regulation Mechanism

- Officer not below rank of **Additional District Magistrate (ADM)** empowered to issue **blocking/removal orders**.
- Applies to **social media intermediaries, service providers, digital platforms**.

Organisational Liability Clause

- Liability extended to **organisations and institutions**.
- Responsible persons liable unless they prove **due diligence / lack of knowledge**.
- Exemption for **bona fide academic, artistic, scientific, religious or heritage content**.

Coverage Area

- Three **climate-vulnerable districts**: Nuapada, Nabarangpur, Mayurbhanj.
- Specific blocks: **Komna (Nuapada), Kosagumuda (Nabarangpur), Raruan (Mayurbhanj)**.
- Expected direct beneficiaries: around **15,000 households**.

Implementing Agencies & Partners

- Government of Odisha - **Department of Agriculture & Farmers' Empowerment (DA&FE)**
- **International Rice Research Institute (IRRI)**
- **ICRISAT (International Crops Research Institute for the Semi-Arid Tropics)**
- **ICAR-CRIDA (Central Research Institute for Dryland Agriculture)**

Core Approach

- “Landscape-first” integrated model (instead of fragmented scheme-based approach).
- Village-cluster level planning integrating:
 - Water management
 - Soil health improvement
 - Crop systems
 - Livestock integration
 - Market linkages

Key Interventions

- Promotion of drought-tolerant and climate-resilient crop varieties.
- Strengthening seed systems for climate adaptation.
- Soil health management and water resource conservation.
- Community-managed water recharge structures.
- Support for farm mechanisation.
- Empowerment of Self-Help Groups (SHGs) and Farmer Producer Organisations (FPOs).

L&T to develop Coal-to-Ammonium Nitrate Project in Odisha

Context

- Infrastructure major Larsen and Toubro has secured a large contract to develop a coal-to-ammonium nitrate project in Odisha, aimed at boosting domestic chemical production and reducing import dependence.

Project Overview

- Executed by Larsen and Toubro Energy Hydrocarbon Onshore.
- Contract awarded by Coal India Limited-Bharat Heavy Electricals Limited joint venture.
- Estimated value: ₹2,500 crore to ₹5,000 crore.

Project Purpose

- Development of a coal gasification-based ammonium nitrate facility.
- Supports conversion of coal into industrial-grade ammonium nitrate.
- Reduces import dependence on chemical inputs.
- Strengthens domestic energy and chemical manufacturing capacity.

- Improved access to high-value markets.

Technology & Monitoring

- Real-time digital dashboard for monitoring:
 - Soil moisture levels
 - Crop performance
 - Household income changes
- Data-driven adaptive management for transparency and efficiency.

Expected Impact

- Improved climate resilience in rainfed and drought-prone regions.
- Enhanced agricultural productivity and cropping intensity.
- Reduced vulnerability to drought-induced income loss.
- Scalable model for replication in other climate-stressed regions globally.

Production Capacity

- Plant designed to produce 2,000 tonnes of ammonium nitrate per day.
- Output will support:
 - Mining sector
 - Infrastructure projects
 - Industrial applications

Execution Model

- Project to be executed on a lump sum turnkey basis.
- Entire responsibility from design to delivery lies with the contractor.

Significance

- Promotes coal gasification technology in India.
- Enhances self-reliance in industrial chemicals.
- Supports foreign exchange savings by reducing imports.
- Strengthens energy security and industrial ecosystem in Odisha and India.

Ammonium Nitrate

Ammonium Nitrate (NH_4NO_3) is a **white, crystalline, water-soluble inorganic compound** widely used as a **high-nitrogen fertilizer** in agriculture and as an **industrial oxidizing agent** in explosives. It contains about **35% nitrogen**, making it highly effective for promoting **plant growth and photosynthesis**. Though it is **not itself explosive**, it can become **highly volatile when combined with fuels (ANFO - Ammonium Nitrate Fuel Oil)**, which is why it is strictly **regulated worldwide for safety reasons**. It has a **molecular weight of 80.044 g/mol**, a **melting point of around 170°C** and a **density of 1.73 g/cm³**. Due to its dual use in **fertilizers and explosives**, it is classified as a **Class 5.1 oxidizing agent**.

Lump Sum Turnkey (LSTK)

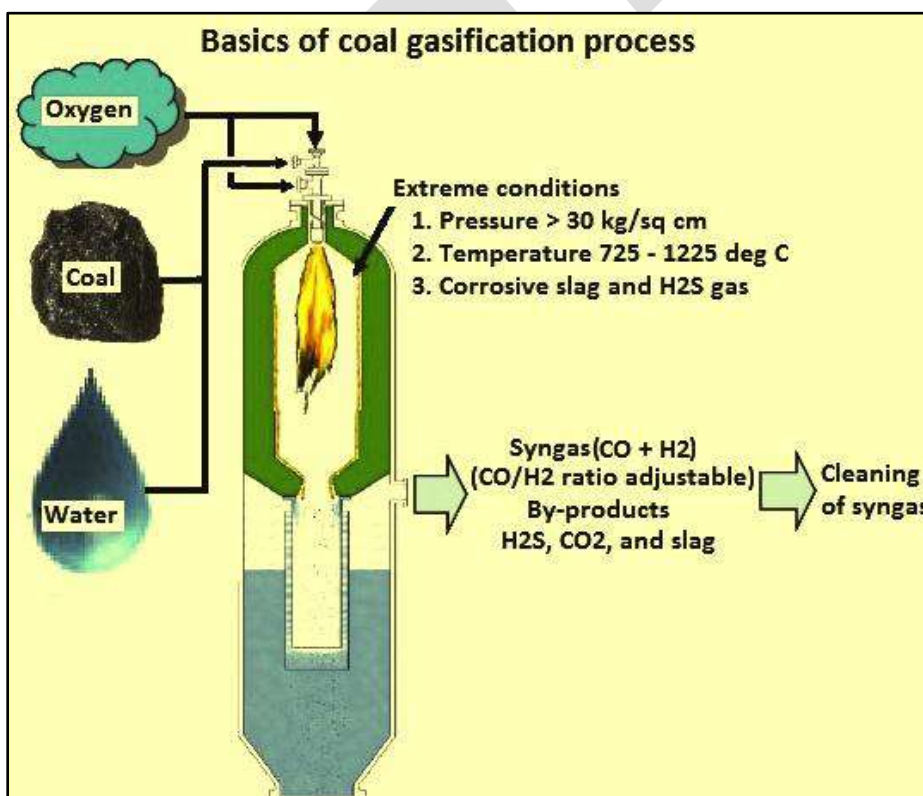
A **Lump Sum Turnkey (LSTK)** contract is a project delivery system in which a single contractor is responsible for the complete **design, procurement, construction and commissioning** of a project at a **fixed price**, delivering a fully operational facility ready for use. The contractor bears the major risks, including **cost overruns, delays and execution issues**, while the client benefits from **cost certainty and minimal involvement** in day-to-day operations. Commonly used in large-scale sectors like **infrastructure, power and oil & gas**, LSTK ensures faster execution and a **single point of responsibility**, but it also limits client control and makes any post-contract changes expensive, with potential risks to quality if not properly monitored.

Coal gasification

Coal gasification is a process in which **coal is converted into synthetic gas (syngas)** through a high-temperature reaction (about **1,000–1,400°C**) with a limited supply of **oxygen and steam**. The resulting syngas is mainly composed of **carbon monoxide (CO), hydrogen (H₂), carbon dioxide (CO₂), methane (CH₄) and water vapour (H₂O)** and can be used to produce **electricity, hydrogen, ammonia, methanol, fuels and other chemicals**.

The process involves **crushing coal**, feeding it into a **gasification reactor**, carrying out **partial combustion and chemical breakdown in oxygen-starved conditions** and then **cleaning the syngas** to remove impurities like tar, sulfur and dust.

Coal gasification is considered a **cleaner alternative to direct coal combustion** because pollutants are captured before energy use and it enables **high-value chemical production**. India is actively promoting this technology, targeting **100 million tonnes of coal gasification by 2030**, supported by policy measures like **Viability Gap Funding (VGF)** and coal linkages, leveraging its large **coal reserves (361.41 billion tonnes, fourth largest globally)**.



SCIENCE & TECHNOLOGY - GK

The **Tyndall Effect** and the blue color of the sky are due to the scattering of light; shorter wavelengths (blue/violet) scatter more than longer wavelengths (red).

The **Stapes**, located in the middle ear, is the smallest and lightest bone in the human body.

The minimum speed needed for an object to break free from Earth's gravitational pull is approximately **11.2 km/s**.

The **Ohm (Ω)** is the standard unit of electrical resistance.

The main components of household LPG cylinders are **Propane and Butane**, with Ethyl Mercaptan added for a distinct smell to detect leaks.

Insulin is produced in the **Islets of Langerhans** in the Pancreas; it regulates blood glucose levels.

In **projectile motion**, **horizontal velocity remains constant** while **vertical motion is uniformly accelerated**.

Ecotone is a **transition zone** between two ecosystems.

Gravitational potential is **negative** and becomes **zero at infinity**.

Echo is heard only if **time gap \geq 0.1 second**.

Saliva contains **amylase**, which digests **starch**.

Lymph is a clear, colorless fluid lacking RBCs and platelets but rich in **lymphocytes**, connecting tissues and aiding **immunity** by draining excess fluid and waste.

Stratosphere (10-50 km) contains the **ozone layer (O_3)**, which absorbs **97-99% of harmful UV-B and UV-C radiation**, protecting life on Earth.

Blood pressure is measured using **sphygmomanometer**.

Chlorophyll is a green pigment that absorbs **blue (400-500 nm)** and **red (650-680 nm)** light, reflecting green and converts light energy into **chemical energy** during photosynthesis.

Methane (CH_4) is a highly potent **greenhouse gas**, with **28-30 \times** the warming impact of CO_2 over 100 years and **80 \times +** over 20 years.

Homeostasis is the self-regulating process by which biological systems maintain a stable, balanced internal environment despite changing external conditions.

Black body absorbs **all incident radiation**.

Cerebrum controls **intelligence and memory**. **Cerebellum** controls **balance**. **Medulla** controls **involuntary actions**.

Electronegativity is **highest for fluorine**, yet **noble gases** generally have **negligible electronegativity**.

RBCs in humans lack **nucleus**, increasing **space for hemoglobin**, but this also limits their **lifespan (~120 days)**.

Blood pressure is **highest in arteries and lowest in veins**, due to **distance from heart and resistance**.

Higher trophic levels have **less energy**, due to **energy loss as heat at each transfer**.

X-rays are **ionizing radiation**, hence prolonged exposure is **harmful**.

Solubility of most solids **increases with temperature**, but gases show **opposite trend**.

During **meiosis I**, **homologous chromosomes** separate, while **meiosis II** separates **sister chromatids**.

Thermal pollution **reduces oxygen solubility in water**, stressing aquatic organisms.

Antibiotics target **bacterial structures like cell wall**, absent in viruses, hence ineffective on them.

Ultrasound frequency used in **medical imaging** ranges from **1-15 MHz**, above audible range.

Optical fibers transmit signals via **repeated total internal reflection**, minimizing signal loss over long distances.

Vitamin C is **essential for collagen synthesis**, hence

deficiency leads to **weak connective tissues**.

Pasteurization typically involves heating milk to ~72°C for 15 seconds, then rapid cooling.

Microwaves operate by producing high-frequency electromagnetic waves (typically at 2.45 GHz) that directly target **polar molecules**—most notably

water—rather than heating the container directly.

ENVIRONMENT & ECOLOGY - GK

Tropical rainforests and estuaries represent some of the **highest Net Primary Productivity (NPP)** ecosystems on Earth per unit area due to abundant sunlight, water and nutrient availability.

Ecotone is a transition zone between ecosystems, often showing **edge effect with higher biodiversity**.

Detritus food chain begins with dead organic matter, not living producers.

Keystone species have **disproportionately large impact** relative to their abundance (e.g., apex predators).

Nitrification converts **ammonia** → **nitrites** → **nitrates**, while **denitrification** returns **N₂** to atmosphere.

Dobson Unit (DU) measures **total column ozone concentration**.

Stratosphere shows **temperature inversion** due to **ozone absorption** of UV radiation.

Paris Agreement (2015) aims to **limit global warming below 2°C** above pre-industrial levels.

Biodiversity hotspots are biogeographic regions with immense biodiversity—**at least 1,500 endemic vascular plant**

species—that are under severe threat, having lost over 70% of their original habitat.

Albedo effect refers to **reflection of solar radiation**, with ice having high albedo.

Photochemical smog forms in presence of **sunlight, NO_x and hydrocarbons**.

El Niño weakens **trade winds**, causing **warming of eastern Pacific Ocean**. El Niño generally weakens the Indian southwest monsoon, reducing rainfall and increasing drought risks in India, particularly during strong events.

La Niña strengthens trade winds, which intensifies the westward movement of warm surface water toward Asia and Australia. La Niña typically brings enhanced rainfall to India, strengthening the summer monsoon and boosting agriculture, particularly rice production.

PM_{2.5} particles (<2.5 μm) can enter **alveoli and bloodstream**, unlike larger PM₁₀ particles.

Ground-level ozone (O₃) forms via **NO_x + VOCs under sunlight**, not directly emitted.

Thermal stratification creates distinct, non-mixing layers in lakes—the warm, oxygen-rich **epilimnion** (top) and the cold,

dense **hypolimnion** (bottom)—inhibiting oxygen transfer.

Mangroves are remarkably efficient carbon sinks, **storing up to 10 times more carbon per hectare than terrestrial forests**, primarily due to their **waterlogged, anoxic (oxygen-poor) soils**.

Dead zones (e.g., Gulf of Mexico) result from **hypoxia (<2 mg/L dissolved oxygen)**.

Nagoya Protocol deals with **access and benefit sharing (ABS)** of genetic resources.

Persistent Organic Pollutants (POPs) are **lipophilic, resistant to degradation and bioaccumulative**.

Stockholm Convention (2001) targets **elimination/restriction of POPs** globally.

Blue Carbon refers to **carbon stored in coastal ecosystems (mangroves, seagrass, salt marshes)**.

Peatlands store **~2× more carbon than all forests combined**, despite small area.

Cadmium exposure causes **Itai-itai disease**, affecting bones and kidneys.

Endosulfan is a **banned organochlorine pesticide** due to **persistence and toxicity**.

Microplastics are plastic **particles smaller than 5 millimeters in size**, originating from degraded debris (secondary) or manufactured products like microbeads and tire wear (primary).

Carbon trading is a **market-based system that reduces greenhouse gas emissions by allowing entities to buy and sell carbon credits or allowances**.

Permafrost thaw releases methane, amplifying climate feedback loops.

Glacial Lake Outburst Floods (GLOFs) are sudden, catastrophic

releases of water from glacial lakes, typically dammed by unstable ice or moraine (sediment).

The **2016 Kigali Amendment** is a legally binding international agreement to amend the Montreal Protocol, phasing down the production and consumption of hydrofluorocarbons (HFCs).

INDIAN HISTORY - ONE LINERS

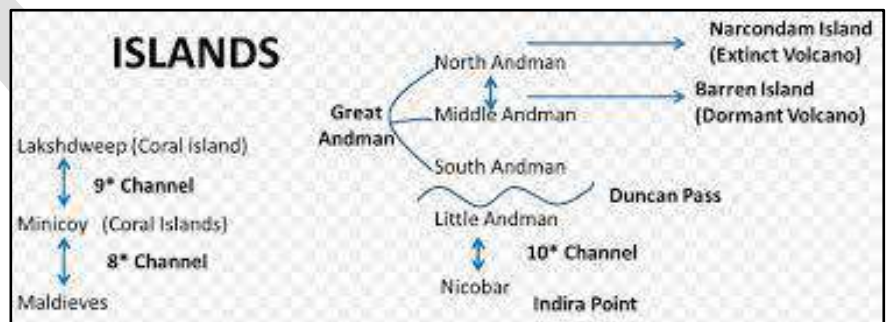
- Vardhamana Mahavira (6th century BCE) is revered as the 24th and final Tirthankara (supreme preacher) of the current era, not the original founder.
- The **Satavahana dynasty** (c. 1st century BCE – 3rd century CE) was the first in India to issue coins made of lead.
- The Chinese pilgrim **Fa-Hien** (Faxian) visited India between **399–414 CE** during the reign of the Gupta emperor **Chandragupta II** (also known as Vikramaditya).
- **Iron**—referred to in later Vedic texts as *Shyama Ayas* or *Krishna Ayas* (meaning dark/black metal)—became prominent during the **Later Vedic period** (c. 1000–600 BCE).
- **Dasarajna Battle** occurred on river **Parushni (Ravi)** between **Bharata king Sudas and 10 tribes**.
- **Allahabad Pillar inscription of Samudragupta** describes **Dakshinapatha campaign and prashasti style**.
- The **Painted Grey Ware (PGW) culture** is an **Iron Age civilization** (approx. 1200–600 BCE) that flourished in the **Ganga-Yamuna Doab** and the **Ghaggar-Hakra valley**. It is primarily associated with the **Later Vedic period**, characterized by early agricultural settlements, the introduction of iron and widespread distribution of fine, wheel-made grey pottery with black painted designs.
- Udayin (c. 460–444 BCE), a **Haryanka dynasty king of Magadha**, moved the capital from Rajgriha to Pataliputra (modern Patna) to exploit its strategic location at the confluence of the Ganga, Son and Gandak rivers.
- **Junagarh Rock Inscription (c. 150 CE)** of **Rudradaman I** (near Girnar, Gujarat) is a **Sanskrit prose record** noting **Sudarshana Lake restoration**, victories over **Satavahanas** and his **benevolent rule**.
- **Indian Councils Act, 1909 (Morley–Minto Reforms)** introduced **separate electorates for Muslims**, allowing them to elect representatives exclusively through **Muslim voters**.
- The **Charter Act of 1833** ended the East India Company's monopoly on trade with China and the tea trade.
- Wood's Despatch of 1854, often called the '**Magna Carta of English Education in India**,' laid the foundation for the modern Indian education system.
- **Dahsala System (1580)** by **Akbar**, devised by **Raja Todar Mal**, fixed land revenue on a **10-year average of yield and prices**, ensuring **stable and fair taxation**.
- **Ashokan inscriptions** predominantly used the **Prakrit** language written in the **Brahmi** script throughout most of the Indian subcontinent. In the north western region (modern Pakistan / Afghanistan), the **Kharosthi** script was used, along with some instances of Greek and Aramaic.

Buddhist Councils

Councils	Patronage	Presided by	Place	Details
First Council (486 BC)	Ajatshatru (Haryanka dynasty)	Mahakassapa Upali	Raj Griha	Compilation of <i>Vinay Pitaka</i> and <i>Sutta Pitaka</i>
Second Council (383 BC)	Kalashoka (Shishunaga dynasty)	Sarvakamini	Vaishali	Division of <i>Sangha</i> into <i>Theravedin</i> and <i>Mahasanghika</i>
Third Council (250 BC)	Ashoka	Mogaliputta Tissa	Pataliputra	Compilation of <i>Abhidham Pitaka</i>
Fourth Council (First century AD)	Kanishka (Kushan dynasty)	Vasumitra	Kashmir	Division into two sects – <i>Hinayana</i> and <i>Mahayana</i>

INDIAN GEOGRAPHY- ONE LINERS

- The Standard Meridian of India (82°30' E) passes through **Mirzapur in Uttar Pradesh** and is the reference for Indian Standard Time (IST). It runs through five Indian states: **Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Odisha and Andhra Pradesh**.
- **India lies entirely in Northern Hemisphere**, but extends across **Eastern longitudes only**.
- **Trans-Himalaya (~1,600 km)** runs **north of the Himalayas** across **China, India & Nepal**, featuring **cold-desert, high-altitude (3,000–6,000+ m)** ranges like **Karakoram, Ladakh, Zaskar & Kailash**.
- **Highest peak of Western Ghats is Anamudi (Kerala)**.
- The Brahmaputra River enters India from Tibet in the state of Arunachal Pradesh, where it is known as the **Siang or Dihang**.
- **Pulicat Lake** lies on the **Andhra Pradesh–Tamil Nadu border** (Tirupati & Thiruvallur) on the **Coromandel Coast**; India's **2nd-largest brackish lagoon**, separated from the **Bay of Bengal** by **Sriharikota Island**.
- **Aravalli range** is among **oldest fold mountains**, showing **residual hill characteristics**.
- **Duncan Passage (~48 km)** is a strait in the **Indian Ocean** separating **Rutland Island (North)** and **Little Andaman (South)**, linking the **Bay of Bengal** with the **Andaman Sea**.
- **Nanda Devi** is widely recognized as the **highest peak located entirely within India**, standing at 7,816 meters in the Chamoli district of Uttarakhand.
- The **Meghalaya Plateau** is separated from the Peninsular Plateau by the **Malda Gap** (also known as the **Garo-Rajmahal Gap or Gap/Fault**).
- **Luni river** flows into **Rann of Kachchh**, not into sea directly.
- The **Subansiri River**, also known as the "Gold River," is the largest tributary of the Brahmaputra River.
- **Karbi Anglong Plateau (Assam)** is an extension of the **Peninsular Plateau**, geologically linked to the **Meghalaya Plateau**, but separated by the **Dhansiri & Kopili river valleys**.
- **Kolleru Lake** is a major freshwater lake located in Andhra Pradesh, situated in the fertile coastal plain between the **Krishna and Godavari river deltas**.
- **Brahmaputra river shows riverine islands**, including **Majuli (world's largest river island)**.
- **Thorium in India** occurs mainly in **monazite sands** along **Kerala, Tamil Nadu & Odisha coasts**, with the **richest deposits on the Travancore coast (Kollam & Palakkad, Kerala)**.
- **Barchans** are **crescent-shaped dunes**, formed in **unidirectional winds**.
- **Vembanad Lake**, located in Kerala, is the **longest lake in India**, stretching approximately 96.5 kilometers in length.
- **Western disturbances originate in Mediterranean region**, bringing winter rainfall to North India.



INDIAN POLITY - ONE LINERS

Zero Hour is not mentioned in the Constitution.

Anti-defection law is in the 10th Schedule.

Contempt of Court derives from **Articles 129 & 215**, which empower the **Supreme Court and High Courts**, as courts of record, to punish for contempt of themselves.

Inter-State Council is under Article 263.

Advocate General is the highest law officer at state level.

Under Article 123 (President) or Article 213 (Governor) of the Indian Constitution, an ordinance promulgated during a legislative recess **must be approved by**

Parliament or the state legislature within six weeks of reassembly.

Article 20(2) of the Indian Constitution guarantees protection against double jeopardy, stating that "no person shall be prosecuted and punished for the same offence more than once".

Prospective overruling was first applied in India in the Golaknath case. The Doctrine of Prospective Overruling allows courts to change the law but apply the new interpretation only to future cases, preserving past decisions for stability and fairness.

Right to Privacy is a Fundamental Right under Article 21 (Puttaswamy case).

Writ of Quo Warranto can be issued against a public office holder.

NITI Aayog is not a constitutional body.

The Ninth Schedule was added by the **First Amendment Act, 1951** to shield certain laws from judicial review, following the Shankari Prasad v. Union of India ruling on challenges to laws violating Fundamental Rights.

Article 300A (inserted by the **44th Amendment, 1978**) provides that **no person shall be deprived of property except by authority of law**, making the **Right to Property** a **constitutional/legal right** (not a **Fundamental Right**) against **arbitrary state action**.

Article 200 empowers the **Governor** to **assent, withhold assent, return (non-Money Bill)**, or **reserve a bill for the President**; if re-passed by the **State Legislature**, the **Governor cannot withhold assent**.

Article 100(3) mandates that the **quorum** for a sitting of either House of **Parliament** is **1/10th of the total membership**, including the **presiding officer (Speaker/Chairman)**.

A No-Confidence Motion in India can **only be introduced in the Lok Sabha (Lower House)**, as per Rule 198 of its Rules of Procedure.

Article 100(3) mandates that the **quorum** for a sitting of either House of **Parliament** is **1/10th of the total membership**, including the **presiding officer (Speaker/Chairman)**.

The **Doctrine of Repugnancy** under **Article 254** dictates that if a State law conflicts with a Central law on a **Concurrent List** subject, the Central law prevails to the extent of the inconsistency, unless the State law has received Presidential assent.

The Inter-State River Water Disputes Act, 1956 is indeed a **statutory law** enacted by Parliament under the authority of **Article 262** of the Indian Constitution, not a directly constitutional provision itself.

Votes cast as **None of the above (NOTA)** are counted, but are considered 'invalid votes'.

Cooperative societies got constitutional status via **97th Amendment**.

INDIAN ECONOMY- ONE LINERS

Purchasing Power Parity (PPP) measures currency value by comparing the cost of an identical basket of goods across different countries.

Transfer payments—such as pensions, unemployment benefits and scholarships—are **excluded from national income (GDP/GNP)** because they are **one-way transfers with no corresponding productive activity**.

Headline inflation is the **overall inflation rate** measured by the **Consumer Price Index (CPI)**, covering a **broad basket of goods and services**,

including **volatile items like food and energy** and is used by central banks like the Reserve Bank of India and European Central Bank for policy decisions.

GVA at Basic Prices (used in India since 2015) measures **sectoral output** as **producer price – product taxes + production subsidies**, reflecting **actual income of producers**—including **production taxes** (e.g., land tax) but excluding **sales taxes** like Goods and Services Tax.

Marginal Standing Facility (MSF) is a **penal overnight emergency borrowing window** for banks to

borrow from the Reserve Bank of India when **liquidity dries up**, introduced in 2011, at a rate ~25 bps above the repo rate, against government securities.

Liquidity Adjustment Facility (LAF) is the Reserve Bank of India's key tool (since 1998) to manage daily liquidity via repo (inject liquidity) and reverse repo (absorb liquidity) operations, ensuring interest rate stability and inflation control.

High-powered money (H) / Reserve Money (M0) is the central bank's total liability—currency with the public + bank reserves—forming the base for credit creation via the money multiplier, issued by institutions like the Reserve Bank of India and Federal Reserve.

Capital Adequacy Ratio (CAR/CRAR) measures a bank's capital buffer against risk-weighted assets to ensure loss absorption and depositor protection, with norms (~8–10%) set under Basel III.

$$\text{CAR} = \frac{\text{Tier 1 Capital} + \text{Tier 2 Capital}}{\text{Risk-Weighted Assets}}$$

A "haircut" under the Insolvency and Bankruptcy Code (IBC) refers to the percentage of debt creditors (usually banks) agree to waive when a distressed company is resolved or liquidated.

Capital Account Convertibility (CAC) is the freedom to convert domestic and foreign financial assets at market rates, enabling unrestricted cross-border capital flows (investment, loans, assets); it enhances global integration but can increase volatility.

Bad bank is a specialized entity that buys NPAs (bad loans) from banks to clean their balance sheets, acting

like an **asset reconstruction company (ARC)** to recover/restructure stressed assets, enabling banks to resume lending.

Prompt Corrective Action (PCA) is a supervisory framework of the Reserve Bank of India to intervene early in stressed banks, imposing curbs on lending, expansion and dividends based on capital adequacy, asset quality (NPAs) and profitability to restore financial health.

Money multiplier measures how much total money supply banks create from initial deposits, given by:

$$\text{Multiplier} = \frac{1}{\text{Reserve Ratio}}$$

It works via **fractional reserve banking**, where banks lend a portion of deposits, expanding money beyond central bank base money.

Treasury Bills (T-bills) are short-term (91/182/364 days), low-risk government securities issued by the Government of India via the Reserve Bank of India, zero-coupon and issued at a discount, redeemed at face value—ideal for safe, short-term investments.

Non-Performing Asset (NPA) is a loan where principal or interest is overdue for >90 days and thus stops generating income for the bank.

Oligopoly is a market structure dominated by a few large firms with high entry barriers, where firms are mutually interdependent and pricing/strategy of one firm significantly influences others, leading to strategic competition or potential collusion.

WORLD GK

The United Nations (UN) was officially established on **October 24, 1945, in San Francisco**, following the devastation of World War II to prevent future global conflicts, promote peace and foster international cooperation.

The **United Nations Security Council (UNSC)** consists of 15 members: 5 permanent (China, France, Russia, UK, US) and 10 non-permanent members elected for 2-year terms by the General Assembly.

Organization of the Petroleum Exporting Countries (OPEC) is an intergovernmental oil cartel founded in 1960 at Baghdad by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela; HQ: Vienna. It coordinates petroleum policies to stabilize oil markets and ensure steady income for members. The United Arab Emirates became the latest country to exit OPEC (and OPEC+) effective 1 May 2026, citing national interest and production flexibility.

Yalta Conference (Feb 4–11, 1945, Crimea): meeting of Franklin D. Roosevelt, Winston Churchill and Joseph Stalin to plan **final defeat of Nazi Germany** and **post-war Europe**; outcomes—**Germany split into 4 occupation zones**, decision to establish the United Nations and pledge of **free elections in liberated Europe**.

The **Strait of Hormuz** is a **narrow waterway** connecting the **Persian Gulf** to the **Gulf of Oman**, bordered by **Iran (north)** and the **Musandam Peninsula (south)**, through which about **25% of global seaborne oil** and **20% of LNG trade** passes, making it a **critical global energy chokepoint**.

Lake Baikal is the **world’s oldest (25–30 million years)** and **deepest lake (1,642 m)**, located in **southern Siberia, Russia**, holding about **20% of Earth’s unfrozen freshwater**—more than all **North American Great Lakes combined**—and is a **UNESCO World Heritage Site** known for **rich biodiversity** and **crystal-clear ice**.

The **Great Barrier Reef is the world’s largest coral reef system**, stretching over **2,300 km (1,400 miles)** along **Queensland, Australia**.

The **New Development Bank (NDB)**, established in **2014–15** by **BRICS nations (Brazil, Russia, India, China, South Africa)** and headquartered in **Shanghai**, is a **multilateral financial institution** that finances **infrastructure and sustainable development projects in emerging economies**.

Brexit refers to the **United Kingdom’s exit from the European Union on 31 January 2020**, following the **2016 referendum (51.9% Leave)**, driven by demands for **national sovereignty, immigration control** and **reduced EU financial contributions**.

The **Quadrilateral Security Dialogue (Quad)** is an **informal strategic grouping of Australia, India, Japan and the United States**, initiated in **2007** by **Shinzo Abe**, aimed at **countering China’s growing economic and strategic influence** and supported by **dialogue and joint exercises like Exercise Malabar**.

The **Schengen Area** is a **border-free zone** allowing **free movement across 29 countries** (including **25 EU members + Iceland, Norway, Switzerland, Liechtenstein**), covering **450+ million people**, with **Bulgaria and Romania joining in 2025**.

The **North Atlantic Treaty Organization (NATO)** is a **32-member political–military alliance** formed in **1949** for **collective security**, headquartered in **Brussels** and based on the principle that **an attack on one member is an attack on all**.

The **TRIPS Agreement** is a **1995 World Trade Organization treaty** that sets **minimum standards for intellectual property rights**, including **20-year patents** and **50-year copyright protection**, covering **copyrights, trademarks and patents**.

IMPORTANT BOOKS

Name of the Author	Name of the Book	Name of the Author	Name of the Book
Dr. Dhiraj Kakadia	Mahatma: A Great Communicator	Raghuram Rajan	I Do What I Do
Kailash Satyarthi	Karuna: The Power of Compassion	Shashi Tharoor	The Battle of Belonging
Shashi Tharoor	The Sage who Reimagined Hinduism: The Life, Lessons and Legacy of Sree Narayana Guru	Ramachandra Guha	India After Gandhi
Biswabhusan Harichandan	E Mati Katha Kahe (Odia); Buxi Jagabandhu: The Great Commander (English)	A. P. J. Abdul Kalam	Ignited Minds
Vijay Goel	Atal Bihari Vajpayee: The Eternal Statesman	A. P. J. Abdul Kalam	Indomitable Spirit
Yadunath Das	Vishwaguru Srila Prabhupada	Gurcharan Das	India Unbound

Prem Prakash	History That India Ignored	Adam Smith	Wealth of Nations
Bankim Chandra Chattopadhyay	Anandamath	Elizabeth Kolbert	The Sixth Extinction
Bankim Chandra Chattopadhyay	Kapalkundala	Shashi Tharoor	Pax Indica: India and the World of the Twenty-first Century
Bankim Chandra Chattopadhyay	Durgeshnandini	Arundhati Roy	Mother Mary Comes to Me
Amartya Sen	The Idea of Justice	Daniel Kraus	Angel Down (Pulitzer Prize for Fiction 2026)
Amartya Sen	Development as Freedom	Bess Wohl	Liberation (Pulitzer Prize for Drama 2026)
Jill Lepore	We the People: A History of the U.S. Constitution (2026)		

IMPORTANT APPOINTMENTS

Name	Appointment / Post
Shri Anugraha Narayana Das	Controller General of Defence Accounts (CGDA)
Vishvajit Sahay	Defence Finance Secretary
Shreyas Iyer	Brand Ambassador of F1 Programme in India
Ashok Lahiri	Vice-Chairman, NITI Aayog
Dinesh Trivedi	India's High Commissioner to Bangladesh
Deep Jariwala	US Governor's Chair
Chanchal Kumar (IAS)	Secretary, Ministry of Information & Broadcasting (I&B)
Sudarshan Pattnaik	Brand Ambassador for India Census 2027
Kiran Mani	Asia-Pacific Head, OpenAI
Vikram Doraiswami	India's Ambassador to China
Lt Gen Dhiraj Seth	Vice Chief of the Indian Army
Ashwini Bhide	First Woman BMC Commissioner
Menaka Guruswamy	India's first openly queer Member of Parliament
Roman Gofman	Chief of Mossad (Israel Intelligence Agency)
Susan Coyle	First female Army Chief of Australia
Harivansh Narayan Singh	Deputy Chairman, Rajya Sabha

AWARDS IN NEWS

Award Name	Details
Pulitzer Prize 2026 (Illustrated Reporting & Commentary)	R K Anand, Suparna Sharma, Natalie Obiko Pearson won for Bloomberg project "trAPPed". Exposed cyber fraud (digital arrest scam) using visual + data storytelling. Highlights cybercrime, digital surveillance risks globally.
Whitley Award 2026	Parveen Shaikh awarded for conserving Indian Skimmer in Ganga Basin. Used community-led guardian model improving nest survival & population growth. Expansion planned in Prayagraj.
Sur Jyotsna National Music Awards 2026	Honoured Sumitra Guha & Laxman Krishnarao Pandit for excellence in Hindustani classical music. Focus on heritage preservation & young artists promotion. Held in New Delhi.

WWF National Award (Machchli Award 2026)	Anita Chaudhary honoured for wildlife conservation & anti-poaching efforts at Shergarh Wildlife Sanctuary. Rescued ~500 animals, acted against poaching, illegal mining, strengthened ecosystem protection.
WWF (World Wide Fund for Nature) National Award	N. Alim Yusuf recognized for AI-based mobile app detecting invasive plant species in Kerala . Enables real-time biodiversity monitoring and supports ecological conservation using AI technology.
GEM Award 2026 (UNIDO)	Guntur Municipal Corporation (Vienna) awarded for deploying 200+ women e-auto drivers in waste collection . Promotes women empowerment, clean energy & sustainable urban governance.
Prof. M.S. Swaminathan Award 2026	Dr. Ch. Srinivasa Rao honoured for climate-resilient agriculture . Focus on soil health, water management & sustainable farming systems . Coincides with Swaminathan centenary year.
Femina Miss India World 2026	Sadhvi Satish Sail (Goa) crowned at Bhubaneswar. Will represent India at Miss World 2027 . Known for modeling, entrepreneurship & youth leadership.
Harvard South Asian Person of the Year 2026	Sayani Gupta recognized for South Asian representation in storytelling . Known for roles in Article 15, Delhi Crime, Four More Shots Please! and debut as director (Aasmani).
World Archery Para Archer of the Year 2025	Sheetal Devi (India) honored by World Archery . First armless female archer to win global recognition. Medals in World Para Archery Championships + Paralympics bronze , symbol of inclusion in sports.

SPORTS RELATED NEWS

Event / News	Key Details (Complete Exam Facts)
Thomas Cup 2026 – India enters Semifinals	India defeated Chinese Taipei 3-0 in Horsens, Denmark ; reached semifinals and secured medal; Lakshya Sen defeated Chou Tien-chen ; Satwik-Chirag beat Wang Chi-lin & Chiu Hsiang-chieh ; Ayush Shetty defeated Lin Chun-Yi .
Thomas Cup 2026 – Semifinal: India vs France	India lost 0-3 vs France ; secured Bronze Medal ; Ayush Shetty lost to Christo Popov ; Kidambi Srikanth lost to Alex Lanier ; HS Prannoy lost to Toma Junior Popov ; Lakshya Sen absent (elbow injury) ; France reached first-ever final .
Commonwealth Weightlifting 2026	India won 4 Gold medals in Apia, Samoa ; Sunil Singh (65kg – 271 kg total) ; Aisangfa Gogoi (58kg – 185 kg) ; Abhinob Gogoi (71kg – 284 kg) ; Charu Pesi (Universal Cup – 289 kg total) ; lifts included Snatch + Clean & Jerk ; strong youth + senior performance.
ISSF Junior World Cup 2026 (Cairo)	India topped medal tally with 16 medals (5 Gold, 6 Silver, 5 Bronze) ; Hemant Burman won Silver (50m Rifle 3P – 351.7) ; Oleg Noskov won Gold (355.6 World Junior Record) ; Trap Mixed Team Bronze by Zuhair Khan & Addya Katyal (score 19) ; strong rifle + trap performance.
World Para Athletics Championships 2027	To be held in June 2027, Tashkent (Uzbekistan) ; venue: Olympic City Main Stadium ; first time in Central Asia ; 13th edition under International Paralympic Committee (IPC) ; earlier hosts: Doha (2015), Dubai (2019), Kobe (2024), New Delhi (2025) .
Virat Kohli – 9000 IPL Runs	First player to score 9000 IPL runs ; achieved in 275 matches vs Delhi Capitals at Arun Jaitley Stadium ; reached milestone in 6th over ; IPL top scorers: Rohit Sharma (7183), Shikhar Dhawan (6769), David Warner (6565), KL Rahul (5580) .
PV Sindhu – BWF Council Role	PV Sindhu elected Chair of Athletes' Commission + Voting Member of BWF Council ; first active elite athlete in governance; attended BWF AGM, Horsens ; supported by BWF President Khunying Patama Leeswadtrakul ; influences global badminton policy.

India IP Fee Waiver (Sports Sector)	Govt announced 3-year IP fee waiver (World IP Day, New Delhi); covers Trademarks, Patents, Copyrights, Designs, GI, Traditional Knowledge ; supports startups, athletes, innovators ; promotes "Innovate-Patent-Produce-Prosper" mission.
Kashmir Willow Bat - GI Tag Highlight	GI-tagged Kashmir willow bat highlighted; symbol of Indian craftsmanship ; boosts exports & sports goods industry ; manufacturing hubs: Jammu & Kashmir, Meerut (UP) ; supports MSME growth in sports sector.
Smart Wearables Hackathon 2026	Launched Viksit Bharat Digital Matrix 2026 Hackathon with IIT Delhi ; focus on smart wearables, fitness tracking, sports tech innovation ; aims to integrate design + technology + sports performance systems .
OmegaBall - IIT Madras Innovation	IIT Madras introduced OmegaBall (3-team football format) ; played on circular field with 3 goals ; each team attacks 2 goals + defends 1 ; inter-college event with Loyola College, Saveetha University, YMCA, etc. ; proposal for national OmegaBall club .
Rithika Sri - First Transgender Umpire (India)	Rithika Sri (Tamil Nadu) became India's first transgender cricket umpire ; TNCA introduced "Other" gender category in umpire exam; born R. Muthuraj (Salem) ; Diploma in Mechanical Engineering; started umpiring in 2021 (Salem, Coimbatore) ; faced discrimination; supported by 2014 SC judgment (third gender recognition) .
ICC Women's T20I Challenge Trophy 2026 (Rwanda)	Launched by ICC on 18 April 2026 in Kigali, Rwanda . Five-nation tournament: Rwanda, Italy, Nepal, USA, Vanuatu . Venue: Gahanga Cricket Stadium . Format: double round-robin (each team plays others twice) . Runs till 2 May 2026 . Aim: develop associate nations, give international exposure and build pathway to global women's cricket tournaments .
Mumbai Cricket Association (MCA) Player Contract Model	MCA becomes first Indian state association to launch structured player contracts (2026-27 season) . Approved by Apex Council . Salary grades: Grade A (₹12-20 lakh), Grade B (₹8-12 lakh), Grade C (₹8 lakh) . Eligibility: MCA registration, fitness standards, no India/ IPL participation in last 2 seasons, selection committee recommendation . Goal: financial stability for domestic cricketers and support beyond IPL/international cricket .
R Vaishali - Women's Candidates 2026 Champion	Indian chess player R Vaishali won Women's Candidates Tournament 2026 (Cyprus) . Qualified for Women's World Chess Championship vs Ju Wenjun . Becomes 2nd Indian woman after Koneru Humpy to achieve this. Dramatic finish: benefited from Divya Deshmukh holding Bibisara Assaubayeva to draw . Started poorly (bottom after 5 rounds), then strong comeback. Previous achievements: 2x FIDE Grand Swiss winner, part of India Women's Olympiad 2024 gold team .
Jannik Sinner - Monte Carlo Masters 2026	Jannik Sinner defeated Carlos Alcaraz (7-6, 6-3) to win Monte Carlo Masters 2026 and regain World No. 1 ranking . Won 3rd ATP Masters 1000 title of 2026 (after Indian Wells & Miami). Extended 17-match winning streak . Became among elite players with 4 consecutive ATP 1000 titles . Rivalry with Alcaraz seen as next-gen tennis rivalry . Monte Carlo win significant as key clay-court preparation for French Open (Roland Garros) .
Asian Wrestling Championships 2026 (India Performance)	Held in Bishkek . India strong performance. Gold medalists: Sujeet Kalkal (65kg) beat Umidjon Jalolov (8-1) ; first Indian 65kg gold since Bajrang Punia (2019) . Abhimanyu Mandwal (70kg) defeated Olympian Tulga (5-3) . India total: 14 medals (2 Gold, 4 Silver, 8 Bronze) . Highlights: technical dominance, Olympic-level wins, rising freestyle strength .
Blanka Vlasic - World 10K Bengaluru 2026 Ambassador	Former Croatian high jumper Blanka Vlasic appointed International Ambassador for TCS World 10K Bengaluru (26 April 2026) . Olympic medals: Silver (2008 Beijing), Bronze (2016 Rio) . Personal best: 2.08 m (national record) . Promotes fitness, mental strength and global participation . Also part of Champions for Peace and Croatian Olympic Committee Vice President .
Payal Nag - Para Archery Historic Gold	18-year-old Payal Nag (Odisha) became first quadruple amputee to win international gold in archery . Won at World Para Archery Series Final 2026 (Bangkok) . Defeated Sheetal Devi (139-136) . Uses prosthetic support +

	shoulder/mouth trigger technique. Coach: Kuldeep Kumar Vedwan. Overcame accident (age 8, electric shock). Symbol of resilience, para-sports inclusion and innovation in adaptive sports.
Murali Sreeshankar – Indian Athletics Series 2026	Murali Sreeshankar won the men’s long jump (8.15m) at the Indian Athletics Series 2026 in Kanteerava Stadium. He was the only athlete to cross 8 metres , marking a strong comeback after 2024 knee surgery. He had missed the Paris Olympics 2024 and returned after an inconsistent 2025 season. His previous best was 8.13m . Sunny Kumar (7.90m) and Purushotham (7.87m) finished second and third. In women’s long jump, Ancy Sojan won gold with 6.54m , followed by Shaili Singh (6.52m) and Moumita Mondal (6.37m).
Khelo India Tribal Games 2026	Karnataka won the inaugural Khelo India Tribal Games 2026 with 23 gold, 8 silver, 7 bronze. Odisha finished second and Jharkhand third, while host Chhattisgarh ended ninth. Karnataka dominated swimming, athletics and wrestling events. Top performers included Manikanta L (8 gold), Dhanush N (5 gold), Anjali Munda (5 gold, Odisha) and Meghanjali (4 gold). Chhattisgarh’s highlight was a football silver medal loss (0–1 to West Bengal). The event promoted tribal talent and grassroots sports development.
India – Doping (AIU Report 2026)	India ranked first globally in doping bans with 148 track & field athletes suspended, ahead of Kenya and Russia. The AIU monitors anti-doping violations under World Athletics. Notable bans include Dutee Chand (4 years), Parvej Khan (till 2030) and Dhanalakshmi Sekar (8 years). Other violations include sample tampering and test evasion. WADA 2024 reported 260 positives in India with a 3.6% positivity rate. NADA collected 7,100+ samples. AFI has introduced reforms, but stronger enforcement is still needed.
Gurjant Singh – Hockey Retirement	Gurjant Singh retired from international hockey at the 2026 Hockey India Awards. He played 130 matches and scored 33 goals, known for speed and attacking strength. He debuted after winning the 2016 Junior World Cup and joined the senior team in 2017. His major achievements include Olympic bronze medals (2020, 2024), Asian Games gold (2022) and Asia Cup gold (2017). He received the Arjuna Award in 2021 and is regarded as a key figure in India’s modern hockey success.

IMPORTANT DAYS IN NEWS

Event	Key Points
Maharashtra Day 2026 (May 1)	Celebrates formation of Maharashtra (1960) after division of Bombay State under the Bombay Reorganisation Act. Reflects Marathi identity, unity and cultural pride. Origin linked to Samyukta Maharashtra Movement demanding linguistic statehood. Celebrated with parades (Shivaji Park), flag hoisting, cultural events like Lavani and awards. Shares date with Gujarat Day.
Gujarat Foundation Day 2026 (May 1)	Marks formation of Gujarat (1960) after separation from Bombay State; also called Gujarat Gaurav Diwas. Rooted in Mahagujarat Movement led by Indulal Yagnik. 2026 celebrations in Surat include cultural programs, police bike stunts, seminars. Highlights Gujarat as “Growth Engine of India” with strong industry, trade and culture (Garba, Dandiya).
International Labour Day 2026 (May 1)	Also called May Day, honours workers’ rights, fair wages, safe conditions. Origin from Haymarket Affair (1886, Chicago) demanding 8-hour workday. First observed globally in 1889; in India in 1923 (Chennai) by Singaravelu Chettiar. Theme 2026: <i>Healthy psychosocial work environment.</i> Linked to labour reforms, dignity of labour and global solidarity.

Ayushman Bharat Diwas 2026 (April 30)	Observed to promote universal healthcare and success of PM-JAY (2018). Provides ₹5 lakh annual coverage per family, benefiting 10.74 crore families (~50 crore people). Features include cashless treatment, nationwide portability, coverage of pre-existing diseases . Aligns with SDG-3 (Health) and aims for “ Healthcare for All ”.
World Day for Safety and Health at Work 2026 (April 28)	Led by International Labour Organization , promotes safe workplaces, accident prevention, occupational health . Theme 2026: <i>Psychosocial work environment</i> . Focus on mental health, stress, work-life balance . Established in 2003, linked to worker protection and global safety standards.
World Malaria Day 2026 (April 25)	Observed to combat malaria, a mosquito-borne disease (Plasmodium parasite) . Established by World Health Organization (2007) . Theme 2026: <i>Driven to End Malaria</i> . Highlights vaccines (RTS,S, R21), prevention, diagnosis . India achieved 80% reduction (2015–23) and targets elimination by 2030 .
National Panchayati Raj Day 2026 (April 24)	Marks implementation of 73rd Constitutional Amendment Act, 1992 , strengthening grassroots democracy . Theme 2026: <i>Sashakt Panchayat, Sarvangeen Vikas</i> . Features 3-tier system: Gram Panchayat, Panchayat Samiti, Zilla Parishad . Ensures 50% reservation for women , promotes decentralization and rural development .
World Book and Copyright Day 2026 (April 23)	Celebrates books, authors, reading culture ; established by UNESCO (1995) . Date linked to deaths of William Shakespeare and Miguel de Cervantes (1616) . Theme focus: <i>Multilingualism</i> . World Book Capital 2026: Rabat . Promotes literacy, publishing, copyright protection .
Earth Day 2026 (April 22)	Global environmental movement started in 1970 led by Gaylord Nelson . Theme 2026: <i>Our Power, Our Planet</i> . Focus on climate change, pollution, biodiversity loss , promoting renewable energy and sustainability . Inspired by Silent Spring by Rachel Carson .
National Civil Services Day 2026 (April 21)	Honours civil servants (IAS, IPS, IFS) for governance and policy implementation. Origin from Sardar Vallabhbhai Patel’s 1947 “Steel Frame of India” speech. Celebrated since 2006 at Vigyan Bhawan . Includes PM’s Awards for Excellence in Public Administration .
World Heritage Day 2026 (April 18)	Also called International Day for Monuments and Sites , led by UNESCO & ICOMOS . Theme 2026: <i>Emergency response for living heritage</i> . Focus on protecting cultural traditions during conflicts/disasters . India has 44 UNESCO sites , highlighting tangible & intangible heritage .
Ambedkar Jayanti 2026 (April 14)	Marks birth anniversary of Dr. B.R. Ambedkar (1891, Mhow) . Known as B.R. Ambedkar Remembrance Day . Chief architect of Indian Constitution, first Law Minister . Champion of Dalit rights, social justice, equality, education, labour & gender rights . Studied at Columbia University & University of London . Key works: Annihilation of Caste, The Problem of the Rupee, Who Were the Shudras?, Thoughts on Pakistan . Celebrations: tributes, rallies, seminars, awareness campaigns . Promotes equality, dignity, inclusive society .
Jallianwala Bagh Massacre Day 2026 (April 13)	Commemorates 1919 massacre (Amritsar) under General Dyer . Trigger: Rowlatt Act protests; arrest of Saifuddin Kitchlew & Satyapal . ~1650 rounds fired, 500+ deaths (Indian estimate) . Turning point → mass freedom movement . Rabindranath Tagore renounced knighthood . Hunter Commission set up (limited action). Udham Singh assassinated Michael O’Dwyer (1940) . Memorial preserves bullet marks, Martyrs’ Well . Symbol of colonial brutality & sacrifice .
Jyotirao Phule Jayanti 2026 (April 11)	Marks birth anniversary (1827); 200th birth anniversary year begins (2026) . Social reformer against caste & gender inequality . Founded Satyashodhak Samaj (1873) . Opened first girls’ school (1848) with Savitribai Phule . Advocated education, equality, farmer & worker rights . Works: Gulamgiri, Shetkaryacha Asud . Celebrations: educational programs, awareness campaigns .
World Homoeopathy Day 2026 (April 10)	Birth anniversary of Samuel Hahnemann . Theme: “ Homoeopathy for Sustainable Health ”. Principles: Like cures like, Law of minimum dose . India = global hub (3.45

	lakh doctors, 8593 dispensaries). Key institutions: CCRH, Ministry of AYUSH. Used in epidemics (JE, Chikungunya, COVID-19). Promotes affordable, preventive healthcare.
World Health Day 2026 (April 7)	Theme: "Together for Health. Stand with Science". Marks WHO founding (1948). Focus: evidence-based healthcare, global cooperation, One Health approach. Events: One Health Summit (G7-France), WHO Global Forum. India initiatives: Ayushman Bharat, NDHM, Jan Aushadhi, Mission Indradhanush. Promotes trust in science, global health security.
International Day of Sport for Development and Peace 2026 (April 6)	Theme: "Sport: Building Bridges, Breaking Barriers". Declared by UN (2013), observed since 2014. Marks first modern Olympics (1896). Promotes peace, inclusion, youth engagement. IOC Olympism365: 550+ programs in 189 countries. Highlight: Dakar 2026 Youth Olympics (Africa's first). Linked to SDGs (2015, strengthened 2024).
National Maritime Day 2026 (April 5)	Commemorates SS Loyalty voyage (1919) – first Indian merchant ship (Scindia Steam Navigation). Declared in 1964. Theme: "Maritime India - Empowering Progress". Importance: 90-95% trade via sea. Role in economy, security, employment. Celebrations: port events, awards, seminars.
International Day for Mine Awareness 2026 (April 4)	Theme: "Invest in Peace; Invest in Mine Action". Established by UNGA (2005). Focus: landmines, victim assistance, safe land restoration. Mine action: detection, removal, rehabilitation. Treaties: Mine Ban Treaty (1997), Cluster Munitions (2008). Promotes peace building & development.
RBI Foundation Day 2026 (April 1)	Marks establishment of RBI (1935, RBI Act 1934). Nationalised (1949). First Governor: Osborne Smith; First Indian: C.D. Deshmukh. Functions: monetary policy, currency issuance, forex management, banking regulation. New initiatives: e-cheques, MuleHunter.AI, fraud protection. Role in inflation control, rupee stability.
Utkal Divas 2026 (April 1)	Odisha Formation Day (1936) – first linguistic state. Leaders: Madhusudan Das, Gopabandhu Das. Origin: Utkal Sammilani (1903). Significance: Odia identity, unity. Culture: Odissi, Jagannath Temple, Konark Sun Temple. Celebrations: parades, cultural events.
Mahavir Jayanti 2026 (March 31)	Birth anniversary of Lord Mahavir (599 BCE). Founder of Jainism. Teachings: Ahimsa, Satya, Asteya, Brahmacharya, Aparigraha. Attained Kevala Jnana. Celebrations: Rath Yatra, prayers, charity, fasting. Promotes peace, ethical living, non-violence.
Earth Hour 2026 (March 28)	20th year of WWF campaign. Started in Sydney (2007). Observed last Saturday of March (8:30-9:30 pm). Promotes climate action, sustainability. India: WWF-India (since 2009, 58 cities). Activities: lights-off, clean-ups, awareness drives. Highlights environment-health link.

IMPORTANT PERSONALITIES

Saint Basaveshwara



A 12th-century philosopher, social reformer and founder of the Lingayat/Veerashaiva movement, he opposed caste hierarchy, ritualism and priestly dominance. He introduced Ishtalinga for direct devotion and advocated Kayaka (dignity of labour) and Dasoha (equitable distribution). Through Vachanas and the Anubhava Mantapa, he promoted equality, ethical living and spiritual democracy, triggering a major socio-religious transformation.

Babu Jagjivan Ram



A **freedom fighter**, **Dalit leader** and long-serving **Union Minister**, he championed **social justice** and **equality**. Founder of the **All India Depressed Classes League**, he worked to end **untouchability** and **discrimination**. As **Labour Minister**, he shaped key labour laws; as **Defence Minister**, he led during the **1971 war**; and as **Agriculture Minister**, he supported the **Green Revolution**, leaving a lasting governance legacy.

Samrat Samprati



A **Mauryan ruler** and grandson of **Ashoka**, he was a major **patron of Jainism**. Guided by **Suhastin**, he promoted the religion by building **temples**, installing **idols** and supporting its spread across regions. Recognized in **Jain traditions** as a key figure, his reign emphasized **non-violence**, **charity** and **religious expansion**.

Shyamji Krishna Verma



A **revolutionary nationalist** and scholar (1857–1930), he was deeply influenced by **Swami Dayanand Saraswati** and led the **Arya Samaj** movement. He founded the **Indian Home Rule Society (1905)** and established **India House in London**, which became a hub for **revolutionary activities**. Through his journal **The Indian Sociologist**, he spread **anti-colonial ideas** and supported leaders like **V.D. Savarkar**, playing a key role in the **overseas freedom movement**.

Guru Hargobind Sahib



The **6th Sikh Guru (1595–1644)**, he introduced the concept of **Miri-Piri (temporal + spiritual authority)** and transformed Sikhism into a **militant-spiritual force**. He established the **Akal Takht (1609)**, encouraged **martial training** and fought several battles against the **Mughals**. Known as **Bandi Chhor Baba**, he symbolized **resistance**, **justice** and **protection of humanity**, shaping the **Saint-Soldier ideal**.

Rani Avantibai Lodhi



A **freedom fighter** and queen of **Ramgarh**, she was a major leader in the **Revolt of 1857**, opposing the **Doctrine of Lapse**. Known for her **military leadership**, she expelled British forces and led the **Battle of Kheri (1857)**. Choosing **martyrdom over surrender (1858)**, she remains a symbol of **courage**, **resistance** and **women's leadership** in India's freedom struggle.

Panini



An ancient scholar (c. **5th century BCE**) from **Gandhara**, he authored the **Ashtadhyayi**, a foundational text of **Sanskrit grammar**. Comprising **~4000 sutras**, it systematized **phonetics**, **morphology** and **syntax** using a **rule-based (generative) system**, often compared to a **language algorithm**. His work laid the basis for **linguistics** and **classical Sanskrit standardization**.

Harichand Thakur



A **social reformer** and founder of the **Matua sect**, he advocated **equality**, **dignity** and **devotion** among marginalized communities, especially **Namashudras**. His teachings emphasized **truth**, **love** and **simple devotion** without renunciation, while rejecting **caste oppression**. Through the **Matua Mahasangha**, he organized the oppressed, making him a key figure in **social-religious reform in Bengal**.

GENERAL KNOWLEDGE IN NEWS - NATIONAL

Himalayan Salamander is a vulnerable amphibian endemic to Eastern Himalayas, found in Darjeeling-Sikkim region.

Project Deepak by BRO develops and maintains strategic roads in the Western Himalayas since 1961.

A Super El Niño (SST anomaly $>2^{\circ}\text{C}$ in Pacific) weakens trade winds and suppresses India's southwest monsoon.

Lipulekh Pass is a strategic tri-junction route (India-Nepal-Tibet) central to trade, security and the Kailash Mansarovar Yatra dispute.

India allowed 100% FDI in insurance via automatic route to boost penetration, capital inflow and competition.

INS Mahendragiri is an indigenous stealth frigate under Project 17A with advanced multi-role combat capabilities.

Mission Drishti is the world's first OptoSAR satellite combining optical and radar imaging for all-weather surveillance.

CINBAX-II is an India-Cambodia joint military exercise focused on counter-terrorism and sub-conventional operations.

Treaty of Sugauli defined the Kali River as Nepal's western boundary.

Underground Coal Gasification is an in-situ process that converts

underground coal into syngas ($\text{CO} + \text{H}_2 + \text{CH}_4$) for energy use.

Nano urea is a liquid fertiliser with $\sim 70\%$ nitrogen-use efficiency but raises concerns of nanotoxicity and environmental risks.

India imports over 80% of critical minerals, with complete dependence on lithium, cobalt and nickel.

National Company Law Tribunal is a quasi-judicial body under the Companies Act, 2013, handling corporate insolvency under the IBC.

The Komagata Maru incident exposed racial immigration policies when Canada denied entry to 376 Indian passengers.

Sabastian Kimaru Sawe became the first athlete to run an official marathon under 2 hours (1:59:30) at the 2026 London Marathon.

Doppler Weather Radar uses the Doppler effect to measure rainfall and wind velocity for accurate storm tracking and forecasting.

Ecocide refers to severe, widespread and long-term environmental damage caused with knowledge of likely harm, though it is not yet an ICC-recognised crime.

Global primary rainforest loss declined by 36% in 2025, yet remains far above targets needed to meet 2030 climate goals.

Election Commission of India introduced QR-based ID cards integrated with ECINET for secure access to counting centres.

Ru-Soam bridges in Sikkim are traditional Lepcha cane suspension bridges showcasing climate-resilient, eco-friendly engineering.

Medical Termination of Pregnancy (Amendment) Act, 2021 allows abortion up to 24 weeks for special categories like minors.

India remains the world's 5th-largest military spender as per Stockholm International Peace Research Institute report.

World Health Organization approved Coartem Baby as the first malaria drug specifically for newborns.

Payments Banks were recommended by the Nachiket Mor Committee.

United Nations Convention on the Law of the Sea governs international waters.

Artemis Accords is based on 1967 Outer Space Treaty.

Dalma Wildlife Sanctuary is a key elephant corridor linking Jharkhand, West Bengal and Odisha.

AZEC Plus is a Japan-led clean energy platform (2023) promoting decarbonisation and energy resilience in Asia.

Prajna is a DRDO-developed AI-based satellite imaging system for real-time security surveillance.

Meghalaya granted official language status to Khasi and Garo under Article 345, alongside English.

Odisha became India's first state to implement Marine Spatial Planning (MSP) for sustainable, zone-based ocean resource management.

Adi Shankaracharya propounded Advaita Vedanta, asserting unity of Atman and Brahman and the concept of Maya.

Amchang Wildlife Sanctuary in Assam is an Eastern Himalayan biodiversity hotspot and an Important Bird Area.

Emperor Penguin is the only bird breeding in Antarctic winter; now Endangered (IUCN).

Atlantic Meridional Overturning Circulation (AMOC) is a thermohaline "global conveyor belt" regulating climate by redistributing heat.

India patent filings grew 30.2% (1.43 lakh in FY26).

Unified Payments Interface (UPI) completed 10 years,

handling ~81% of India's retail digital payments.

Kalai-II Project on Lohit River (Arunachal Pradesh) has 1200 MW capacity.

Haemophilus influenzae type b causes meningitis and spreads via respiratory droplets.

Sanderling is a migratory Arctic shorebird and a bio-indicator of coastal ecosystem health.

Mount Semeru is Java's highest active stratovolcano on the Pacific Ring of Fire.

PRACTICE MCQs

Q1. The blue colour of the sky is primarily due to:

- (a) Reflection of sunlight by oceans
- (b) Refraction of light in atmosphere
- (c) Scattering of shorter wavelengths of light
- (d) Absorption of red light by ozone

Q2. Which component is added to LPG cylinders to detect leakage?

- (a) Methane
- (b) Ethyl Mercaptan
- (c) Propylene
- (d) Ethanol

Q3. Which layer of the atmosphere contains the ozone layer?

- (a) Troposphere
- (b) Mesosphere
- (c) Stratosphere
- (d) Thermosphere

Q4. Echo is heard only if the time gap between original sound and reflected sound is:

- (a) ≥ 0.01 second
- (b) ≥ 0.05 second
- (c) ≥ 0.1 second
- (d) ≥ 1 second

Q5. Which gas has a higher warming potential than CO₂ over a 100-year period?

- (a) Oxygen
- (b) Nitrogen
- (c) Methane
- (d) Hydrogen

Q6. Photochemical smog is formed due to the reaction of:

- (a) SO₂ and CO
- (b) NO_x and hydrocarbons in sunlight
- (c) CO₂ and water vapor
- (d) Methane and oxygen

Q7. Which of the following is a characteristic of lymph?

- (a) Contains RBCs
- (b) Contains platelets
- (c) Rich in lymphocytes
- (d) Red in color

Q8. Which ecosystem shows very high Net Primary Productivity (NPP)?

- (a) Desert
- (b) Tundra
- (c) Tropical rainforest
- (d) Grassland

Q9. Which pollutant can directly enter the bloodstream through alveoli?

- (a) PM10
- (b) PM2.5
- (c) CO₂
- (d) SO₂

Q10. The smallest and lightest bone in the human body is located in the:

- (a) Inner ear
- (b) Middle ear
- (c) Skull
- (d) Nasal cavity

Q11. Which gas shows decreasing solubility with increasing temperature?

- (a) Oxygen
- (b) Sodium chloride
- (c) Sugar
- (d) Potassium nitrate

Q12. Which of the following pollutants is primarily responsible for Itai-itai disease?

- (a) Mercury
- (b) Lead
- (c) Cadmium
- (d) Arsenic

Q13. In projectile motion (neglecting air resistance), which of the following remains constant?

- (a) Vertical velocity
- (b) Acceleration
- (c) Horizontal velocity
- (d) Total velocity

Q14. Which of the following best defines a keystone species?

- (a) Species with maximum population
- (b) Species at lowest trophic level
- (c) Species with disproportionately large ecological impact
- (d) Species that produce most biomass

Q15. Which part of the brain is responsible for maintaining balance?

- (a) Cerebrum
- (b) Cerebellum
- (c) Medulla
- (d) Hypothalamus

Q16. Which international agreement focuses on eliminating Persistent Organic Pollutants (POPs)?

- (a) Kyoto Protocol
- (b) Paris Agreement
- (c) Stockholm Convention
- (d) Montreal Protocol

Q17. Optical fibers work on the principle of:

- (a) Reflection
- (b) Refraction
- (c) Total internal reflection
- (d) Diffraction

Q18. The escape velocity of Earth is approximately:

- (a) 7.9 km/s
- (b) 9.8 km/s
- (c) 11.2 km/s
- (d) 15 km/s

Q19. The unit of electrical resistance is:

- (a) Volt
- (b) Ampere
- (c) Ohm
- (d) Watt

Q20. Which of the following ecosystems acts as a transition zone between two ecosystems?

- (a) Biome
- (b) Ecotone
- (c) Biosphere
- (d) Habitat

Q21. Which type of pesticide is Endosulfan?

- (a) Organophosphate
- (b) Organochlorine
- (c) Carbamate
- (d) Bio-pesticide

Q22. Which gas is primarily responsible for the formation of ground-level ozone?

- (a) CO₂
- (b) SO₂
- (c) NO_x
- (d) CH₄

Q23. Which process returns nitrogen gas back to the atmosphere?

- (a) Nitrification
- (b) Ammonification
- (c) Denitrification
- (d) Nitrogen fixation

Q24. Microplastics are defined as plastic particles smaller than:

- (a) 1 mm
- (b) 2 mm
- (c) 5 mm
- (d) 10 mm

Q25. Which amendment aims to phase down Hydrofluorocarbons (HFCs)?

- (a) Kyoto Protocol
- (b) Paris Agreement
- (c) Kigali Amendment
- (d) Montreal Protocol

ANSWERS

Q. No.	Correct Option	Correct Answer
1	C	Scattering of shorter wavelengths of light
2	B	Ethyl Mercaptan
3	C	Stratosphere
4	C	≥ 0.1 second
5	C	Methane
6	B	NO _x and hydrocarbons in sunlight
7	C	Rich in lymphocytes
8	C	Tropical rainforest
9	B	PM2.5
10	B	Middle ear (The Stapes)
11	A	Oxygen
12	C	Cadmium
13	C	Horizontal velocity (and Acceleration due to gravity)
14	C	Species with disproportionately large ecological impact
15	B	Cerebellum
16	C	Stockholm Convention
17	C	Total internal reflection
18	C	11.2 km/s
19	C	Ohm
20	B	Ecotone
21	B	Organochlorine
22	C	NO _x
23	C	Denitrification
24	C	5 mm
25	C	Kigali Amendment