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FOR UPSC CIVIL SERVICE EXAMINATION

DATE: 07/10/2025 (TUESDAY)



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1. Central Council for Research in Homoeopathy (CCRH) and Manipal Academy of Higher Education (MAHE) Collaboration on Biosafety Training & Research Partnership

1. Background and Objective

- The **Central Council for Research in Homoeopathy (CCRH)**, under the **Ministry of AYUSH**, has partnered with the **Manipal Institute of Virology (MIV)**, part of the **Manipal Academy of Higher Education (MAHE)**, Karnataka.
- The collaboration aims to enhance **public health preparedness, biosafety awareness, and outbreak response capabilities** among Homoeopathy researchers.
- A **five-day residential workshop**, titled “*Biosafety & Outbreak Simulation Training 2025*” (6–10 October 2025), was launched at MAHE.

2. Capacity Building and Training Initiative

- The program was specifically designed to **train research scientists** from CCRH on biosafety protocols and epidemic response mechanisms.
- Out of participants from **33 institutes across 22 States/UTs**, **30 scientists** from **14 States/UTs** were selected after a **rigorous online assessment** conducted by MIV.
- The training involved **simulation exercises, biosafety drills, and outbreak management modules**, enhancing scientists’ ability to respond to **pandemic-like situations**.



3. Key Institutional Collaboration

- A **Memorandum of Understanding (MoU)** was signed between **CCRH and MAHE** to promote sustained collaboration in **research, training, and education**.
- The MoU signifies an institutional commitment towards **joint scientific research, exchange of expertise, and development of biosafety infrastructure** in AYUSH-based public health research.
- **Signatories:** Dr. Subhash Kaushik (Director General, CCRH) and Dr. P. Giridhar Kini (Registrar, MAHE).

4. Significance for Public Health and AYUSH Sector

- The initiative underscores the **integration of traditional medicine (Homoeopathy) with modern biosafety and epidemiological sciences**.
- It aims to position Homoeopathy researchers as active contributors to **disease surveillance and outbreak control**, aligning with India’s “**One Health**” approach.
- Strengthening biosafety skills enhances **national pandemic preparedness**, ensuring safe handling of biological materials during research.

5. Constitutional and Legal Framework

- **Article 47** of the Constitution directs the State to **improve public health** as a primary duty under the **Directive Principles of State Policy (DPSPs)**.



- The **Ministry of AYUSH** operates under the mandate of promoting traditional medicine systems under the **Drugs and Cosmetics Act, 1940**, and the **National AYUSH Mission (NAM)**.
- The **Biological Diversity Act, 2002**, and **National Health Policy, 2017**, also emphasize safe research practices and capacity-building in biosciences.

6. Definition of Key Terms

- **Biosafety:** A set of preventive measures designed to reduce the risk of transmission of infectious agents in laboratories and public health research environments.
- **Public Health Preparedness:** The capacity of health systems and institutions to **prevent, detect, and respond effectively** to public health emergencies such as epidemics and pandemics.

Conclusion

The CCRH–MAHE collaboration represents a **progressive step in integrating homoeopathic research with biosafety and outbreak management**, reinforcing India's holistic health framework. Such interdisciplinary initiatives strengthen the **national health infrastructure**, empower scientific capacity, and promote sustainable health solutions through traditional and modern knowledge convergence.

UPSC Relevance

- **GS Paper II:** Issues relating to health, Government policies and interventions for development in health sector.
- **GS Paper III:** Science and Technology—developments and their applications in everyday life; biotechnology and biosafety measures.
- **GS Paper IV (Ethics):** Public health ethics and responsibilities of scientific institutions.
- **Current Affairs Relevance:** Collaboration under Ministry of AYUSH; strengthening of epidemic preparedness; biosafety research framework in India.

2. Viksit Bharat Buildathon 2025 – A Nationwide Innovation Movement for School Students

1. Overview and Objectives

- **Viksit Bharat Buildathon 2025** is India's **largest school-level innovation hackathon**, jointly organised by the **Department of School Education & Literacy (DoSEL)**, Ministry of Education, and the **Atal Innovation Mission, NITI Aayog**.
- It aims to nurture **innovation, creativity, and problem-solving skills** among students of **Classes 6–12** across India.
- The core themes include **Atmanirbhar Bharat, Swadeshi, Vocal for Local, and Samriddh Bharat**, aligning with the vision of a **self-reliant and developed India (Viksit Bharat)** by 2047.



2. Scale and Structure of the Event

- The Buildathon engages **1 crore students nationwide**, making it the **largest-ever school hackathon** in India.



- The **Nationwide Synchronised Live Buildathon** will be held on **13 October 2025**, streamed live across all schools.
- The event structure includes team-based participation (3–5 students per team), **mentorship by experts** from incubation centres and corporates, and **inclusive participation** from aspirational districts, tribal, and remote regions.
- An **award pool of ₹1 crore** is announced, with **10 National, 100 State, and 1000 District-level winners**.

3. Key Features and Implementation Mechanism

- **Dedicated Portal:** Registration and submission via the official portal (vbb.mic.gov.in), ensuring transparency and accessibility.
- **Mentorship Ecosystem:** Guidance by volunteers from **Higher Education Institutions, Mentor of Change Network, and corporate partners**.
- **Experiential Learning:** Aligned with **National Education Policy (NEP) 2020**, the Buildathon provides **hands-on learning** to enhance 21st-century skills such as design thinking and innovation.

4. Constitutional and Legal Framework

- **Article 45 and Article 21A** of the Constitution ensure the **right to education** and emphasize **holistic development** of children.
- **Article 51A(h)** makes it a **fundamental duty** to develop a spirit of inquiry and scientific temper among citizens.
- The **National Education Policy (NEP) 2020** encourages innovation, critical thinking, and entrepreneurship from the school level.
- The **Atal Innovation Mission (AIM)**, established under **NITI Aayog**, provides institutional support for innovation and incubation, fulfilling the **constitutional goal of participatory education and nation-building**.

5. Definitions and Conceptual Understanding

- **Hackathon:** A collaborative innovation event where participants work intensively to develop technological or creative solutions to real-world problems within a short time.
- **Atmanirbhar Bharat:** A vision of a self-reliant India emphasizing domestic production, innovation, and reduced import dependence.
- **Viksit Bharat:** A strategic goal of transforming India into a **developed nation by 2047** through inclusive growth and innovation-driven development.

6. Significance and Expected Outcomes

- Promotes **grassroots innovation** by empowering students to solve **local community problems** using creative and practical ideas.
- Encourages **interdisciplinary learning** integrating science, technology, and entrepreneurship.
- Strengthens the **innovation ecosystem** across schools, contributing to the **knowledge economy** envisioned in NEP 2020.



- Enhances India's **human capital base** by nurturing young innovators aligned with national priorities like Make in India and Digital India.

Conclusion

The **Viksit Bharat Buildathon 2025** is a transformative step toward creating a **nationwide culture of innovation and problem-solving** among school students. By combining the spirit of **Atmanirbhar Bharat** with experiential learning, it empowers young minds to become **future innovators and nation-builders**, aligning education with India's **developmental aspirations for 2047**.

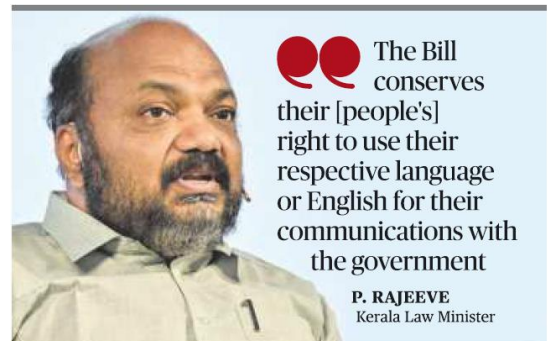
UPSC Relevance

- **GS Paper II:** Government policies and interventions in education; role of NITI Aayog and Atal Innovation Mission.
- **GS Paper III:** Science & Technology, innovation ecosystem, and startup culture in India.
- **GS Paper IV (Ethics):** Innovation as a moral and civic responsibility; youth participation in nation-building.
- **Current Affairs:** National Education Policy (NEP 2020), Atmanirbhar Bharat initiatives, and innovation-led learning reforms.

3. Kerala Malayalam Language Bill, 2025 – Safeguarding Linguistic Rights and Promoting Malayalam as Official Language

1. Background and Objectives

- The **Left Democratic Front (LDF)** government in Kerala has tabled the **Malayalam Language Bill, 2025** in the State Assembly to strengthen the constitutional and cultural position of the **Malayalam language**.
- The Bill aims to **make Malayalam the sole official language** of Kerala, replacing the existing bilingual status of **Malayalam and English**.
- It seeks to ensure that Malayalam becomes the **primary medium of official communication**, administration, and education in the State, while also protecting **linguistic minority rights**.



2. Key Provisions of the Bill

- **Official Status:** Malayalam will be the **official language** for all **government communications, ordinances, Bills, Acts, rules, orders, and by-laws**. English translations will be provided for clarity.
- **Judicial Use:** Malayalam will become the **legal language** in courts handling **minor offences** under district and sessions jurisdictions.
- **Education:** Malayalam will be made the **first language in all schools**, promoting its academic and cultural significance.
- **Linguistic Minorities:** The Bill safeguards the rights of **Tamil, Kannada, Tulu, and Kongu** speaking citizens to communicate with the government in their own languages or in English.



- **Administrative Mechanism:** Establishment of a **Malayalam Language Development Directorate** under the **Official Language Wing for Personnel and Administrative Reforms** to monitor and implement language policies.

3. Constitutional and Legal Framework

- **Article 345:** Empowers the State Legislature to adopt any language in use within the State as the **official language** for State purposes.
- **Article 350A:** Directs the State to provide **facilities for instruction** in the mother tongue at the primary stage for linguistic minorities.
- **Article 350B:** Provides for a **Special Officer for Linguistic Minorities** to safeguard their interests.
- **Eighth Schedule of the Constitution:** Recognizes **Malayalam** as one of India's official languages.
- The Bill also aligns with the **Right to Education Act, 2009**, and the **Three-Language Formula** under the **National Education Policy (NEP) 2020**, though earlier versions faced objections from the Centre on these grounds.

4. Definitions and Conceptual Understanding

- **Official Language:** A language used by the government for official communication, lawmaking, and administration within a particular jurisdiction.
- **Linguistic Minority:** A group of people whose mother tongue is different from the principal language of the State; they are entitled to protection under **Articles 29 and 30** of the Constitution.
- **Language Policy:** A governmental framework to promote, regulate, and protect the use of specific languages in education, administration, and communication.

5. Significance and Policy Implications

- Strengthens **linguistic identity and cultural heritage** of Kerala in the face of increasing global linguistic homogenization.
- Promotes **administrative accessibility** and public participation by ensuring government communication in the **people's mother tongue**.
- Encourages **educational inclusivity** and emotional connection to the language from early schooling.
- Ensures **balance between regional pride and minority rights**, fostering linguistic harmony in a multilingual society.
- Reinforces the constitutional spirit of **unity in diversity**, aligning with the broader vision of **cultural federalism**.

6. Challenges and Way Forward

- Implementation may face **bureaucratic resistance** due to English-dominant administrative practices.
- Coordination with the **Union Government** is crucial to ensure compliance with national education and minority protection frameworks.
- The success of the Bill will depend on **institutional capacity, teacher training, and digital adaptation** in Malayalam.

Conclusion



The **Malayalam Language Bill, 2025** is a landmark legislative initiative aimed at **revitalizing Kerala's linguistic heritage** and ensuring that **Malayalam remains central to governance, education, and identity**. By institutionalizing the language's use while safeguarding minority rights, the Bill reflects the constitutional commitment to both **cultural preservation and inclusivity** within India's multilingual framework.

UPSC Relevance

- **GS Paper II:** Polity and Governance – Official Language policy, Rights of Linguistic Minorities, Centre-State Relations.
- **GS Paper I:** Indian Culture – Role of language in preserving regional identity and heritage.
- **GS Paper IV (Ethics):** Ethical governance and cultural sensitivity in administration.
- **Current Affairs Relevance:** State-level language policies; debates on linguistic federalism; implementation of Articles 345–350B.

4. Criticism of the Indian Judiciary and Its Role in Governance and Development

1. Context and Background

- In recent discourse, members of the ruling establishment, including **Sanjeev Sanyal (PM's Economic Advisory Council)**, have labelled the judiciary as a major obstacle to India's goal of becoming "*Viksit Bharat*."
- Such criticism alleges that courts delay decisions, obstruct policy implementation, and hinder economic progress.
- However, the article argues that such views are **misinformed, simplistic, and overlook systemic governance failures**.

2. Judiciary's Structural and Functional Realities

- **Judicial workload:** Indian judges handle **50–100 cases daily**, with extensive preparation outside court hours.
- **Judicial vacancies and inadequate infrastructure** contribute significantly to delays.
- **Vacations and court hours**, often criticised, are essential for drafting judgments and research work — not mere leisure.
- India's judiciary operates under immense pressure, reflecting administrative inefficiencies rather than being their cause.



3. Misplaced Blame and Governance Failures

- The **judiciary enforces laws made by Parliament**, and if a law (e.g., Section 12A of the Commercial Courts Act, 2015) is poorly designed, fault lies with the **legislature**, not judges.
- **Government litigation practices** severely clog the system: ministries and departments frequently file **routine and unnecessary appeals**, making the **Union and States the largest litigants**.
- Poorly framed laws, lack of accountability in bureaucracy, and vague drafting compound judicial burden — seen in the **new Income Tax Act** and **criminal law "reforms."**



4. Core Legal and Constitutional Dimensions

- **Constitutional mandate:**
 - **Article 50** – separation of judiciary from the executive.
 - **Article 13 & 32/226** – empower courts to uphold *Rule of Law* and protect *Fundamental Rights*.
 - **Article 141** – judicial decisions form binding precedents, ensuring consistency.
- **Doctrine of Checks and Balances:** Judiciary serves as a constitutional check, not an impediment to development.
- Reducing judicial independence undermines the **basic structure of the Constitution**, as upheld in **Kesavananda Bharati (1973)** and **Indira Gandhi v. Raj Narain (1975)**.

5. Real Issues and Need for Systemic Reform

- True judicial reform should target:
 - Filling **vacancies in lower courts** (where pendency is most acute).
 - Improving **court infrastructure and digital case management**.
 - Reducing **frivolous government litigation** and ensuring **clear, precise legislative drafting**.
- Development should not be equated with executive convenience; **speed without justice** threatens democratic legitimacy.

6. Broader Perspective and Conclusion

- The judiciary mirrors the same inefficiencies that plague India's governance — it is **not the sole or primary hurdle** to progress.
- Courts are designed to protect citizens from arbitrary governance, not to act as rubber stamps for executive policy.
- **True development (Vikas)** must rest on **rule of law, justice, and institutional accountability**, not on scapegoating independent institutions.

Conclusion:

Criticism of the judiciary as the “biggest hurdle” to India's development is misplaced. The real challenge lies in **legislative drafting, bureaucratic inefficiency, and excessive state litigation**. Strengthening judicial capacity, ensuring executive accountability, and reforming governance systems—not weakening the courts—are the pathways to achieving *Viksit Bharat* in a constitutional democracy.

UPSC Relevance:

- **GS Paper II:** Structure and Functioning of the Judiciary, Separation of Powers, Role of Judiciary in Governance.
- **GS Paper IV:** Ethics in Public Administration – Accountability and Integrity of Institutions.
- **Essay Paper:** Balancing Development and Rule of Law in a Democracy.
- **Keywords:** *Judicial Independence, Rule of Law, Checks and Balances, Judicial Accountability, Viksit Bharat Vision, Governance Reforms.*



5. Israel's New Military Doctrine and the Challenges to Lasting Peace in West Asia

1. Context and Background

- The article examines the aftermath of **U.S. President Donald Trump's new peace plan**, which generated temporary optimism between **Israel and Palestine**.
- Despite Hamas's willingness to release hostages and Trump urging Israel to stop bombings, the author argues that Israel's **continued military aggression** and expansionist policies make lasting peace improbable.
- The **Israeli response post-October 7, 2023 Hamas attacks** has been marked by disproportionate military force and ideological rigidity under **Prime Minister Benjamin Netanyahu's far-right government**.

2. Israel's Aggressive Military Policy and Humanitarian Crisis

- Israel's policy of **collective punishment** in Gaza — indiscriminate bombings, ground offensives, and forced displacement — has been described as **genocidal** by a **U.N. Commission of Inquiry**.
- Statements from top Israeli officials (e.g., **Yoav Gallant** calling Palestinians "human animals") reflect **dehumanisation rhetoric** that deepens ethnic hostility.
- The **Finance Minister Bezalel Smotrich's** remark calling Gaza a "real estate bonanza" underscores the government's intent of **territorial annexation** rather than reconciliation.
- Over **67,000 Palestinians (mostly civilians)** have been killed, and Gaza faces **famine-like conditions**, signaling a severe **humanitarian crisis** and potential **violation of international humanitarian law (IHL)**.



3. Constitutional, Legal, and International Dimensions

- **Under International Law:**
 - Actions amounting to **genocide** violate the **1948 Genocide Convention** and **Fourth Geneva Convention (1949)** on the protection of civilians in wartime.
 - The **Rome Statute of the International Criminal Court (ICC)** defines deliberate targeting of civilians as a **war crime**.
- **U.N. Charter Principles:** Article 2(4) prohibits the use of force except in self-defence or with Security Council authorization.
- **Recognition of Statehood:** Most U.N. member states recognize **Palestine as a sovereign state**, yet Israel refuses a two-state solution.
- **Doctrine of Proportionality and Distinction:** Israel's actions violate these foundational principles of the **Law of Armed Conflict**.

4. Israel's Expanding Regional Hegemony

- Israel's recent strikes on **Iran, Syria, Yemen**, and even **Qatar-based Hamas negotiators**, signal a doctrine of **regional pre-emption**—an assertion of **hegemonic power** in West Asia.



- The Netanyahu government's rhetoric about "changing regimes" reflects a **shift from deterrence to domination**, challenging West Asian stability.
- Despite tactical successes — decapitating Hamas and Hezbollah leadership — Israel **failed to eliminate Hamas** or achieve security, showing that **military might cannot replace political solutions**.

5. Global Backlash and Domestic Discontent

- Global opinion has turned sharply against Israel:
 - **European Commission** considering **trade restrictions and sanctions**.
 - **Norway's sovereign wealth fund** divesting from Israeli firms.
 - Growing **boycott movements** in Western societies.
- Domestically, **74% of Israelis** now support ending the war; dissent within the **military establishment** and opposition parties accuses Netanyahu of prolonging the conflict for political survival.
- The **U.S. under Donald Trump** is signaling reduced tolerance for unrestrained Israeli action, suggesting a shift in the traditional U.S.-Israel relationship.

6. Key Concept: Doctrine of "Offensive Defense"

- Israel's emerging "**go on the attack**" doctrine emphasizes **pre-emptive strikes, occupation, and deterrence through destruction**, replacing the older defensive security model.
- However, this approach **intensifies radicalization** among Palestinians, threatens long-term Israeli security, and **undermines prospects for a negotiated two-state solution**.

Conclusion:

Israel's militarized approach, backed by far-right politics and U.S. complicity, has deepened regional instability and humanitarian suffering. Military dominance without justice or diplomacy cannot ensure peace. True and lasting resolution lies in **reviving multilateral negotiations, recognizing Palestinian sovereignty**, and adhering to **international humanitarian norms**. Peace cannot emerge from occupation; it must rest on justice, coexistence, and respect for human rights.

UPSC Relevance:

- **GS Paper II:** International Relations – India and West Asia; U.N. and Global Peace Mechanisms; International Law and Humanitarian Principles.
- **GS Paper III:** Internal Security and Conflict Resolution.
- **Essay Paper:** "Peace through Power or Power through Peace – Lessons from the Israel-Palestine Conflict."
- **Key Terms:** *Genocide Convention, International Humanitarian Law (IHL), Two-State Solution, Doctrine of Proportionality, Regional Hegemony, Offensive Defense Doctrine.*

6. Rising Crimes Against Children in Assam, Rajasthan, and Kerala – Causes and Implications

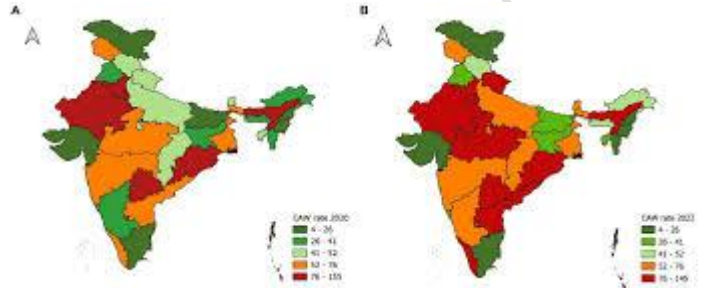
1. Overview and Context



- The **National Crime Records Bureau (NCRB) 2023 data** shows a significant surge in reported crimes against children, especially in **Assam, Rajasthan, and Kerala**.
- Nationally, cases increased by **25%**, but these three States witnessed a much sharper rise — **Assam (≈100%)**, **Kerala (≈106%)**, and **Rajasthan (≈70%)**.
- However, experts caution that a rise in recorded cases does not necessarily indicate a rise in actual crimes; it may also reflect **improved reporting, stricter enforcement, or reclassification of offences**.

2. Assam – Impact of Crackdown on Child Marriage

- Assam's spike was largely driven by a **state-led crackdown on child marriage** under the **Prohibition of Child Marriage Act, 2006 (PCMA)**.
- Cases under PCMA rose from **around 150 annually (2020–2022)** to **over 5,200 in 2023**, accounting for **52% of all crimes against children** that year.
- This indicates **policy-driven enforcement**, not necessarily a social surge in child marriage.
- **Constitutional Link:** Article 39(f) (Directive Principles) directs the State to ensure children are protected from exploitation and given opportunities for healthy development.



3. Rajasthan – Reclassification and Rise in Sexual Offence Cases

- The increase in Rajasthan's numbers stemmed from two key factors:
 - **(a) Legal Reclassification:** Shift from filing rape cases solely under **Section 376 IPC** to including **Sections 4 and 6 of the Protection of Children from Sexual Offences (POCSO) Act, 2012**, ensuring more accurate categorization of child-related sexual crimes.
 - **(b) Rise in Kidnapping Cases:** The share of **kidnapping and abduction cases** rose to **over 54% of total crimes** against children in 2023.
- While classification accuracy improved, actual incidents of **child sexual abuse** and **abduction** also increased.
- **Relevant Legal Framework:**
 - *POCSO Act, 2012* – provides for gender-neutral protection of minors from sexual assault and mandates child-friendly judicial procedures.
 - *IPC Sections 363–369* – address kidnapping and abduction of minors.

4. Kerala – Improved Reporting and Classification Under POCSO

- Kerala also recorded a **106% rise** in cases, primarily due to better **implementation of the POCSO Act** and enhanced reporting mechanisms.
- State awareness campaigns and improved **police sensitization** led to greater trust among victims in reporting offences.
- The rise reflects **administrative vigilance and public responsiveness**, not just criminal incidence.



- **Legal Provisions:** Kerala's state-level **Child Protection Units** and adherence to **Juvenile Justice (Care and Protection of Children) Act, 2015** have improved the documentation and monitoring of such crimes.

5. Broader Legal and Constitutional Framework

- **Article 15(3):** Permits special laws for women and children.
- **Article 21:** Right to life and dignity includes protection of children from abuse and exploitation.
- **Juvenile Justice Act, 2015:** Provides a comprehensive framework for child welfare and rehabilitation.
- **National Commission for Protection of Child Rights (NCPCR):** Statutory body under the **Commission for Protection of Child Rights Act, 2005**, monitoring violations and implementation of child-centric laws.
- The **UN Convention on the Rights of the Child (1989)**, ratified by India in 1992, obliges states to ensure protection from exploitation and violence.

6. Interpretation and Implications

- The data highlights **variation in causative factors** — law enforcement in Assam, legal reclassification in Rajasthan, and improved reporting in Kerala.
- It also emphasizes the need for **data contextualization**, as rising numbers may indicate **progress in awareness and enforcement**, not necessarily worsening child safety.
- The focus should shift to **preventive social policies, awareness, and victim rehabilitation** rather than just numerical comparisons.

Conclusion:

The NCRB 2023 data reveals that while crimes against children appear to have surged in some states, much of the increase is due to **proactive enforcement and improved data accuracy**. Nevertheless, the trend underscores the urgent need for **child-sensitive policing, faster trials under POCSO courts, and comprehensive child welfare programmes**. True progress lies not only in counting cases but in ensuring **justice, rehabilitation, and protection for every child**.

UPSC Relevance:

- **GS Paper II:** Social Justice – Vulnerable Sections, Government Policies, Child Rights Legislation.
- **GS Paper III:** Role of Law Enforcement and Social Reforms.
- **Essay Paper:** “Protecting the Future: Challenges and Reforms in India’s Child Protection Framework.”
- **Key Terms:** *POCSO Act, Child Marriage Act, Juvenile Justice Act, NCPCR, Child Protection, Legal Reclassification, Improved Reporting Mechanism.*

7. Could Hidden Dental Bacteria Explain Sudden and Deadly Heart Attacks?

1. Key Findings of the Study:

- A Finnish study examined coronary arteries from **121 sudden-death autopsies** and **96 vascular surgery patients** and discovered **DNA of viridans streptococci**, a common oral bacterium, in about **42% of samples**.



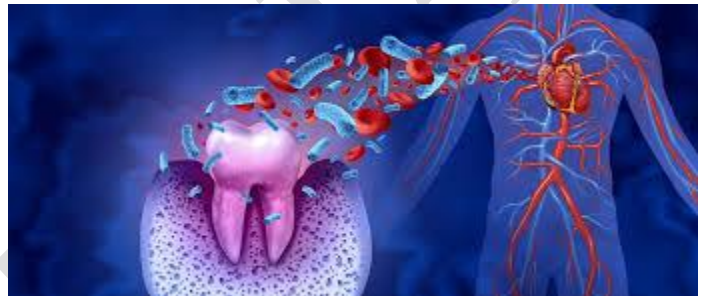
- These bacteria form **biofilms** (protective bacterial layers) deep inside **atherosclerotic plaques**, remaining hidden from immune detection until plaque rupture, possibly triggering **fatal heart attacks**.
- The bacteria activated **Toll-Like Receptor 2 (TLR2)** during plaque rupture, indicating a strong **immune-inflammatory response** linked to heart attacks.

2. Definition of Key Terms:

- **Atherosclerosis:** Hardening and narrowing of arteries due to fatty deposits (plaques) on inner walls, leading to heart disease.
- **Biofilm:** A structured community of bacteria enclosed in a self-produced matrix, resistant to antibiotics and immune clearance.
- **Toll-Like Receptors (TLRs):** Proteins that recognize microbial components and activate immune defense mechanisms.

3. Oral Health–Heart Connection:

- Poor oral hygiene and **gum disease (periodontitis)** may allow bacteria to enter the bloodstream through micro-tears or inflamed gums, settling in coronary arteries.
- **Population studies (ARIC and Korean cohorts)** show that regular dental care reduces cardiovascular and stroke risks by up to **23%**, while untreated dental infections increase risk.
- Dental bacteria can shift between stable and invasive forms, potentially causing **infective endocarditis** (infection of heart valves) or **coronary inflammation**.



4. Medical and Scientific Implications:

- **Antibiotic treatments** for coronary disease have failed likely because **biofilm-embedded bacteria** resist both drugs and immune attack.
- Future strategies may include **oral bioburden monitoring**, **preventive antibiotics (penicillin)** for high-risk individuals, or even **vaccines** targeting bacterial biofilm formation.
- The Finnish team plans to sequence the **coronary microbiome** to understand microbial diversity and its role in plaque instability.

5. Public Health and Policy Relevance (India's Context):

- Cardiovascular diseases occur at **younger ages in India**, often accompanied by **poor oral hygiene** and high prevalence of **untreated gum disease**.
- Experts emphasize public education on the “**mouth–heart connection**”, promoting early gum disease detection and interlinking **dentistry with cardiology** for holistic care.
- **Oral swab surveillance** after age 40 could help identify bacterial biofilm risk in community health programs.

6. Legal and Institutional Frameworks:

- Under **Article 47** of the Constitution, improving public health is a **Directive Principle of State Policy (DPSP)**.



- The **National Oral Health Programme (NOHP)** under the Ministry of Health & Family Welfare aims to integrate oral health into **primary healthcare** systems.
- The study's findings could guide future **public health policies** linking dental care with **Non-Communicable Disease (NCD)** prevention strategies.

Conclusion:

The study presents strong evidence that **oral bacteria may play a hidden but direct role in heart attacks** by forming resistant biofilms within arterial plaques. This deepens scientific understanding of **infection-driven inflammation in cardiovascular diseases**, highlighting the need for interdisciplinary collaboration between cardiologists and dentists. Maintaining **oral hygiene** is thus not only a dental necessity but a potential **life-saving cardiovascular measure**.

UPSC Relevance:

- Important for **GS Paper II & III**: Health Policy, Disease Prevention, Scientific Research and Innovation.
- Relevant to **Essay and Ethics Papers**: Preventive healthcare, integration of medical disciplines, and the public duty to promote health.
- Possible linkage questions on **biofilm resistance**, **non-traditional risk factors in NCDs**, and **constitutional responsibility for public health**.

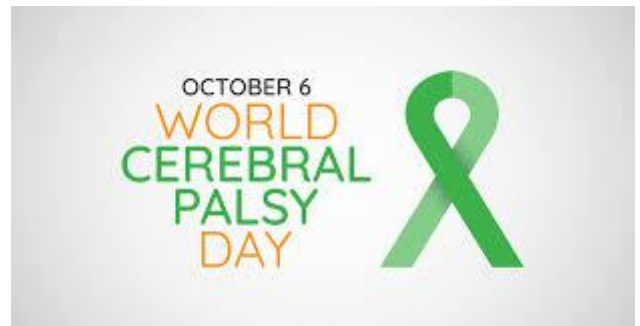
8. World Cerebral Palsy Day 2025

1. Objective and Significance:

- The Department of Empowerment of Persons with Disabilities (DEPwD) observed **World Cerebral Palsy Day** across its **National Institutes and Composite Regional Centres (CRCs)** to raise awareness about **Cerebral Palsy (CP)** and promote **inclusion, empowerment, and community participation**.
- The day aimed to celebrate the **strength and resilience of children and families** living with CP and enhance public understanding of the condition.

2. Definition and Medical Understanding of Cerebral Palsy:

- **Cerebral Palsy (CP)** is a **group of neurological disorders** that affect movement, muscle tone, and posture, resulting from **abnormal brain development or brain injury** during early life.
- It is the **most common motor disability in childhood**, and symptoms vary widely — including muscle stiffness, poor coordination, and difficulty in walking or speech.
- Early **intervention, physiotherapy, and community support** play key roles in improving quality of life.



3. Nationwide Observance and Activities:

- **Swami Vivekanand National Institute of Rehabilitation Training and Research (SVNIRTAR), Odisha**: Organized inclusive activities such as a **Walking Competition and Target Ball Game**, celebrating courage and enthusiasm of children with CP.



- **National Institute for Locomotor Disabilities (NILD), Kolkata:** Celebrated on the theme “**Unique and United**” with a **Sit and Draw Competition** and **Cultural Programmes** involving parents and officials.
- **National Institute for Empowerment of Persons with Multiple Disabilities (NIEPMD), Chennai:** Conducted **Awareness Sessions for Parents** of children with CP and Autism Spectrum Disorder (ASD), offering **practical guidance** and counseling.
- **Composite Regional Centres (CRC) – Tripura, Nellore, and Bhopal:** Focused on **early intervention, mental health awareness, and inclusive education** through school-level sensitization and community programs.

4. Constitutional and Legal Framework:

- **Article 41** of the Constitution directs the State to provide **public assistance for education and rehabilitation** of persons with disabilities.
- The **Rights of Persons with Disabilities (RPwD) Act, 2016** recognizes **Cerebral Palsy as a specified disability** (Section 2(zc)) and mandates equal rights, accessibility, and non-discrimination.
- Under the **National Policy for Persons with Disabilities (2006)** and **Accessible India Campaign (Sugamya Bharat Abhiyan)**, inclusion and accessibility remain central goals.
- **DEPwD**, as the nodal department, coordinates rehabilitation, research, and awareness under the **Ministry of Social Justice and Empowerment**.

5. Public Health and Social Significance:

- Early diagnosis and intervention are essential to prevent **secondary disabilities** and improve functional outcomes.
- Community-based rehabilitation and parent empowerment help create **inclusive societies** aligned with the **UN Convention on the Rights of Persons with Disabilities (UNCRPD)**, to which India is a signatory.
- Observing such days enhances **public empathy, awareness, and policy responsiveness** toward persons with disabilities.

6. Institutional and Policy Impact:

- The celebration demonstrates DEPwD’s **integrated and decentralized approach** by involving multiple national institutions across states.
- It reflects the government’s focus on **holistic empowerment**, combining medical, educational, and social inclusion for children with CP.
- Promotes collaboration between **schools, healthcare systems, and rehabilitation centers** to ensure equality of opportunity and dignity.

Conclusion:

World Cerebral Palsy Day 2025 signifies India’s growing commitment to **inclusive development**, where individuals with disabilities are recognized not for their limitations but for their **potential and resilience**. Through awareness drives, parent education, and policy support, the government emphasizes **“empowerment over sympathy.”** A strong legal and institutional framework under the RPwD Act reinforces this vision of a barrier-free and inclusive India.

UPSC Relevance:



- Important for **GS Paper II (Governance, Social Justice, Vulnerable Sections)** and **GS Paper IV (Ethics – Empathy, Compassion)**.
- Key links to **Government Schemes, Rights of Persons with Disabilities Act, 2016, and Directive Principles (Article 41)**.
- Can be used in Essay and Mains answers on **inclusive governance, disability rights, and social empowerment** initiatives.

9. India–Australia Joint Defence and Security Cooperation Declaration

1. Strengthening Bilateral Defence Partnership:

- India and Australia are set to sign a **Joint Declaration on Defence and Security Cooperation**, marking a major milestone in their growing **strategic and defence partnership**.
- The declaration will define parameters for **future defence engagement**, covering areas such as joint production, maritime security, and technology sharing.
- Defence Minister **Rajnath Singh's visit to Australia (October 9–10, 2025)** underscores the partnership's strategic depth and its importance in maintaining **Indo-Pacific stability**.

2. Background and Strategic Context:

- The visit commemorates the **fifth anniversary of the India–Australia Comprehensive Strategic Partnership (2020–2025)**, which has strengthened cooperation in **defence, trade, renewable energy, and education**.
- Australia has acknowledged India's **rising defence manufacturing capabilities**, viewing India as a **reliable partner in indigenous defence production**, moving beyond traditional reliance on Western systems.
- The number of **bilateral defence engagements** has tripled in a decade — from 11 in 2014 to 33 in 2024 — showing deepening military cooperation.

3. Key Defence and Maritime Cooperation Initiatives:

- Both nations are developing a **Maritime Security Roadmap** to enhance **Maritime Domain Awareness (MDA)** and ensure security across the **Indian Ocean Region (IOR)**.
- India and Australia have established an **Air-to-Air Refuelling Implementing Arrangement**, India's **first such agreement with any country**, demonstrating increased interoperability and operational synergy.
- Defence collaboration includes **joint exercises, training programs, and technological cooperation** under broader Indo-Pacific frameworks such as **QUAD (Quadrilateral Security Dialogue)**.

4. Definition and Strategic Importance:

- **Maritime Domain Awareness (MDA)**: Refers to effective understanding of maritime activities that could impact security, economy, or environment, enabling better surveillance and coordination in naval operations.
- The initiative enhances both countries' capacity to safeguard **sea lanes of communication, counter piracy, and ensure a rules-based maritime order** in the Indo-Pacific.



- The joint declaration reinforces the principle of **strategic autonomy**, allowing both countries to strengthen defence cooperation without compromising sovereign interests.

5. Constitutional and Legal Framework (India's Perspective):

- The **Union List (Seventh Schedule, Article 246)** grants Parliament exclusive power over **defence, foreign affairs, and national security**.
- **Article 51(c)** of the Constitution directs the State to foster respect for international law and treaty obligations.
- India's engagement with Australia aligns with the **Defence Production and Export Promotion Policy (DPEPP) 2020**, promoting **Atmanirbhar Bharat** (self-reliance) in defence manufacturing and **strategic partnerships** with like-minded democracies.

6. Geopolitical and Economic Implications:

- The partnership complements India's **Act East Policy** and Australia's **Pacific Step-Up Policy**, together strengthening the **Indo-Pacific strategic architecture**.
- Enhanced collaboration may lead to **joint defence R&D, supply chain integration, and investment opportunities** for Indian defence firms.
- It also boosts regional deterrence and promotes a **free, open, and inclusive Indo-Pacific**, countering emerging security challenges from coercive regional powers.

Conclusion:

The proposed **India–Australia Joint Defence and Security Cooperation Declaration** symbolizes a maturing strategic relationship anchored in **trust, interoperability, and shared democratic values**. By combining maritime cooperation, defence innovation, and industrial collaboration, both nations aim to enhance their **collective security posture** in the Indo-Pacific region. This partnership not only contributes to regional peace but also strengthens India's vision of **Atmanirbhar Defence and Strategic Autonomy**.

UPSC Relevance:

- Important for **GS Paper II (International Relations – India and its Neighbourhood, Global Groupings, Bilateral Agreements)** and **GS Paper III (Security, Defence Technology, Maritime Security)**.
- Linked to topics such as **Indo-Pacific Strategy, QUAD Cooperation, Defence Industrial Policy, and India's Foreign Policy Vision**.
- Useful for Essay and Mains answers on themes like **Strategic Partnerships in a Multipolar World** and **Atmanirbhar Bharat in Defence Sector**.

10. High-Level Committee Approves Additional Central Assistance to Flood-Affected States and for Modernization of Fire Services (2025)

1. Key Decision and Fund Allocation

- The High-Level Committee (HLC) chaired by Union Home Minister **Amit Shah** approved **₹707.97 crore** as additional Central assistance from the **National Disaster Response Fund (NDRF)** for **Assam and Gujarat**, affected by floods and landslides in 2024.
- Allocation: **₹313.69 crore** for **Assam** and **₹394.28 crore** for **Gujarat**, subject to adjustment of 50% of the opening balance in their **State Disaster Response Fund (SDRF)**.



2. Fire Services Modernization Initiative

- HLC approved **₹903.67 crore** to **Haryana, Madhya Pradesh, and Rajasthan** under NDRF for **Expansion and Modernization of Fire Services**.
- Of this, **₹676.33 crore** is Central assistance: Haryana (₹117.19 crore), Madhya Pradesh (₹397.54 crore), Rajasthan (₹388.94 crore).
- This marks a proactive step to strengthen **urban resilience** and **disaster response infrastructure**.

3. Broader Financial Support During FY 2025–26

- Under the leadership of **Prime Minister Narendra Modi**, the Centre has extended strong fiscal support to states for disaster management.
- Funds released: **₹13,603.20 crore** to **27 States** under **SDRF** and **₹2,024.04 crore** to **12 States** under **NDRF**.
- Additional funds: **₹4,571.30 crore** from the **State Disaster Mitigation Fund (SDMF)** to 21 States and **₹372.09 crore** from the **National Disaster Mitigation Fund (NDMF)** to 9 States.



4. Constitutional and Legal Framework

- **Constitutional Basis:**
 - Entry 56, List I (Union List) – “Coordination and determination of standards in institutions for scientific or technical education” enables disaster management standards.
 - Entry 23, List III (Concurrent List) – “Social security and social insurance; employment and unemployment” includes disaster relief.
- **Legal Basis:**
 - Governed by the **Disaster Management Act, 2005**, which established **NDMA** (National Disaster Management Authority) and **NDRF** (National Disaster Response Fund).
 - **Sections 46 & 48** of the Act provide for constitution of NDRF and SDRF, managed by the Ministry of Home Affairs.

5. Significance of the Decision

- Strengthens **Centre–State cooperative federalism** in managing natural calamities.
- Enhances **institutional capacity** and **disaster resilience** through modernization of critical infrastructure like fire services.
- Reinforces **financial predictability** and **quick response mechanisms** during emergencies.

6. Key Definitions

- **NDRF (National Disaster Response Fund):** A centrally administered fund for emergency relief to States affected by severe calamities, supplementing SDRF resources.
- **SDRF (State Disaster Response Fund):** The primary State-level fund for meeting expenses for immediate relief during disasters.



- **SDMF/NDMF:** Funds focused on mitigation and prevention measures rather than post-disaster relief.

Conclusion

The HLC's approval of over ₹1,600 crore demonstrates the Centre's commitment to **strengthening disaster preparedness, building resilient states**, and ensuring **rapid rehabilitation**. The modernization of fire services adds a crucial dimension to **urban safety and risk mitigation**.

UPSC Relevance

- **GS Paper 2:** Governance – Disaster Management mechanisms; Centre-State relations.
- **GS Paper 3:** Disaster Management – Institutional and legal frameworks (Disaster Management Act, 2005).
- **Prelims:** Components of NDRF, SDRF, NDMA, and related funds.
- **Mains Link:** “Discuss the role of institutional and financial mechanisms in strengthening India's disaster resilience framework.”

11. Proposed Nuclear Bill and Private Sector Participation in India

1. Proposed Legislation and Objective

- The government is deliberating a new **Nuclear Bill** to allow **private sector participation** in building and operating nuclear power plants in India.
- Current operators: **NPCIL, BHAVINI, and ASHVINI** (NPCIL-NTPC JV).
- Aim: Achieve **100 GW of nuclear capacity by 2047**, supporting India's **decarbonisation and energy security goals**.

2. Legal Amendments and Challenges

- Proposed amendments to:
 - **Atomic Energy Act, 1962** – governs nuclear energy, safety, and operations.
 - **Civil Liability for Nuclear Damage Act, 2010 (CLNDA)** – defines liability in case of nuclear accidents.
- Key challenge: Align India's liability laws with international norms like **Convention on Supplementary Compensation (CSC)** to facilitate foreign participation.
- Core concerns: **Liability of private operators**, safe **disposal of nuclear waste**, and **reprocessing of spent fuel**.



3. Private Sector Role and Partnerships

- Private entities may provide: **land, capital, cooling water**, while NPCIL manages **design, quality assurance, and operations**.
- Encourages development of **Bharat Small Reactors (BSRs)** – 220 MW **PHWRs** suitable for industrial captive power.



- Objective: Promote **domestic nuclear manufacturing** and joint ventures with **foreign companies**.

4. Strategic and Energy Significance

- Supports India's **non-fossil fuel energy target of 500 GW** and achieving **50% renewable energy** by 2030.
- BSRs can be located near **energy-intensive industries** like steel, aluminium, and metals for **localized decarbonisation**.
- Enhances **energy security**, **private sector investment**, and **technological innovation** in nuclear energy.

5. Constitutional and Regulatory Framework

- **Constitutional Basis:**
 - Entry 24, Union List – “Piracies and other crimes committed on the high seas; nuclear energy and its regulation”
 - Entry 53, Union List – “Regulation of mines and mineral development including atomic minerals”
- **Regulatory Bodies:**
 - **Atomic Energy Regulatory Board (AERB)** – oversees safety and compliance.
 - **International Atomic Energy Agency (IAEA)** – monitors adherence to international safeguards under India-U.S. Civil Nuclear Agreement.

6. Key Definitions

- **Bharat Small Reactors (BSRs):** Compact 220 MW Pressurized Heavy Water Reactors, suitable for industrial captive use.
- **PHWR (Pressurized Heavy Water Reactor):** Uses heavy water as moderator and coolant; allows natural uranium as fuel.
- **Civil Liability for Nuclear Damage Act:** Defines legal liability for nuclear accidents and sets claims framework.

Conclusion

The proposed Nuclear Bill seeks to modernize India's nuclear sector by enabling private sector participation, promoting **public-private partnerships**, and aligning liability laws with international norms. It addresses energy security, industrial decarbonisation, and long-term nuclear capacity expansion while balancing **safety and environmental considerations**.

UPSC Relevance

- **GS Paper 2:** Policies on energy, public-private partnerships, legislative amendments.
- **GS Paper 3:** Nuclear energy, non-fossil fuel energy targets, industrial decarbonisation, disaster and safety management.
- **Prelims:** Atomic Energy Act, CLNDA 2010, BSRs, PHWRs, NPT and CSC conventions.
- **Mains Link:** “Discuss the role of private sector in India's nuclear energy expansion and its strategic significance for energy security and climate goals.”



12. MSC Certification for Indian Fisheries Sector

1. MSC Certification Initiative

- Around **10 Indian marine and saline fish and shrimp varieties** are set to receive **Marine Stewardship Council (MSC) certification**, with the first batch submitted in 2026.
- MSC certification promotes **ecologically sustainable fishing practices** and ensures **steady income for fishing communities**.
- Certification acts as a **global quality label**, increasing market access and revenue potential.

2. Economic and Trade Significance

- Expected to increase fisheries sector revenue by **30%** and mitigate impacts of **trade restrictions**, especially from the U.S.
- Opens access to affluent international markets such as **Europe and Japan**, which increasingly demand sustainably sourced fish.
- Helps Indian fisheries **diversify export destinations** and secure better pricing.



3. Government Support and Policy Framework

- The **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** will subsidize the certification process.
- Certification is conducted by **third-party auditors**, ensuring credibility and global recognition.
- Supports India's **blue economy initiatives**, promoting responsible fisheries and long-term sustainability.

4. Technical and Regulatory Standards

- MSC certification is based on:
 - **FAO Code of Conduct for Responsible Fishing**
 - **FAO Guidelines for Eco-labelling of Fish and Fishery Products from Marine Capture Fisheries**
- Technical gaps like **stock assessments for shrimp, squid, cuttlefish, and octopus** are being addressed.
- Ensures compliance with **sustainability norms and environmental safeguards**.

5. Sustainability and Environmental Impact

- Encourages **eco-friendly fishing practices** to prevent overfishing and habitat degradation.
- Contributes to **biodiversity conservation** in marine ecosystems.
- Aligns with **UN Sustainable Development Goal 14 (Life Below Water)**, promoting sustainable use of oceans and marine resources.

6. Key Definitions



- **MSC Certification:** A globally recognized standard for sustainable fishing practices that ensures traceability and ecological responsibility.
- **Pradhan Mantri Matsya Sampada Yojana (PMMSY):** Government scheme to modernize fisheries, enhance productivity, and promote sustainable practices.
- **Eco-labelling:** Labelling of products based on environmentally responsible production methods.

Conclusion

The MSC certification for Indian fisheries strengthens **sustainability, global market access, and income security for fishing communities**, while addressing **trade challenges and environmental concerns**. It reflects India's commitment to **responsible fisheries management** and integration with global eco-friendly standards.

UPSC Relevance

- **GS Paper 2:** Government schemes like PMMSY, trade policies, international agreements on fisheries.
- **GS Paper 3:** Sustainable fisheries, blue economy, environmental conservation, SDG 14.
- **Prelims:** MSC Certification, PMMSY, FAO Code of Conduct, eco-labelling.
- **Mains Link:** "Discuss the role of sustainability certifications in enhancing India's fisheries exports and promoting ecological conservation."