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The Analyst

CURRENT AFFAIRS Handout

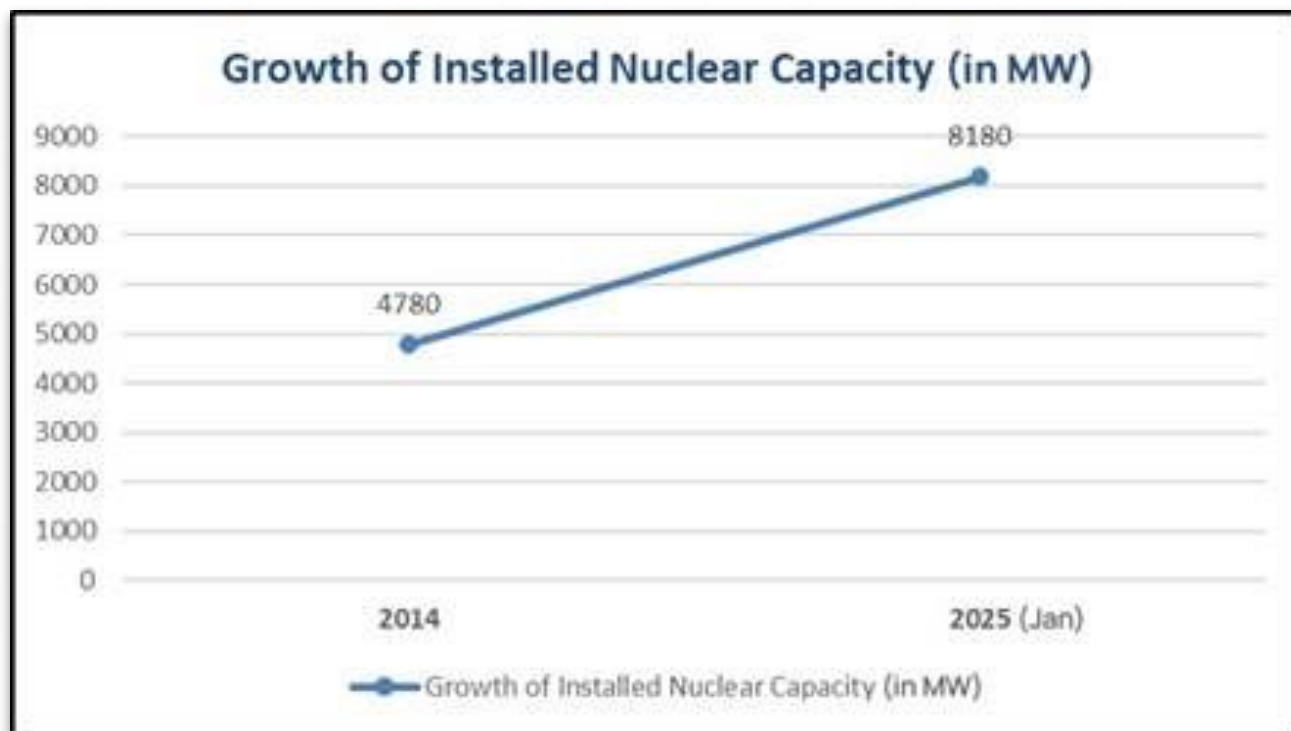
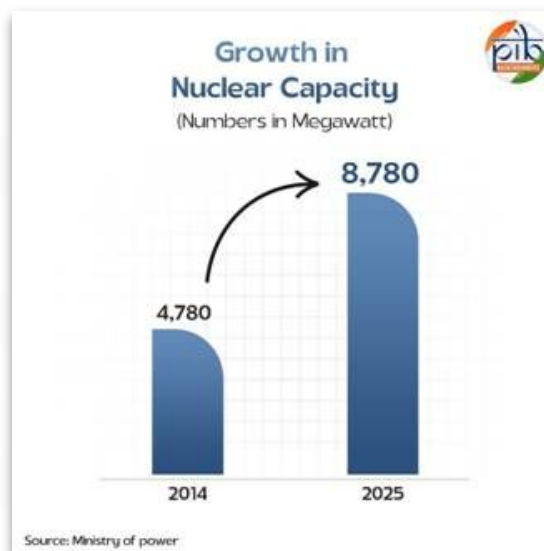
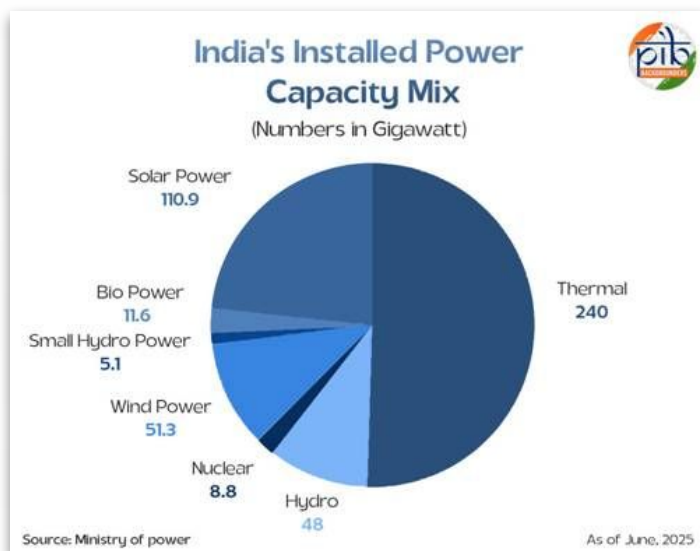
7th October 2025



Private Push in India's Nuclear Power

CONTEXT: Government of India is drafting a new Nuclear Energy Bill to allow private sector participation in building and operating nuclear power plants

India's Current Nuclear Power Framework



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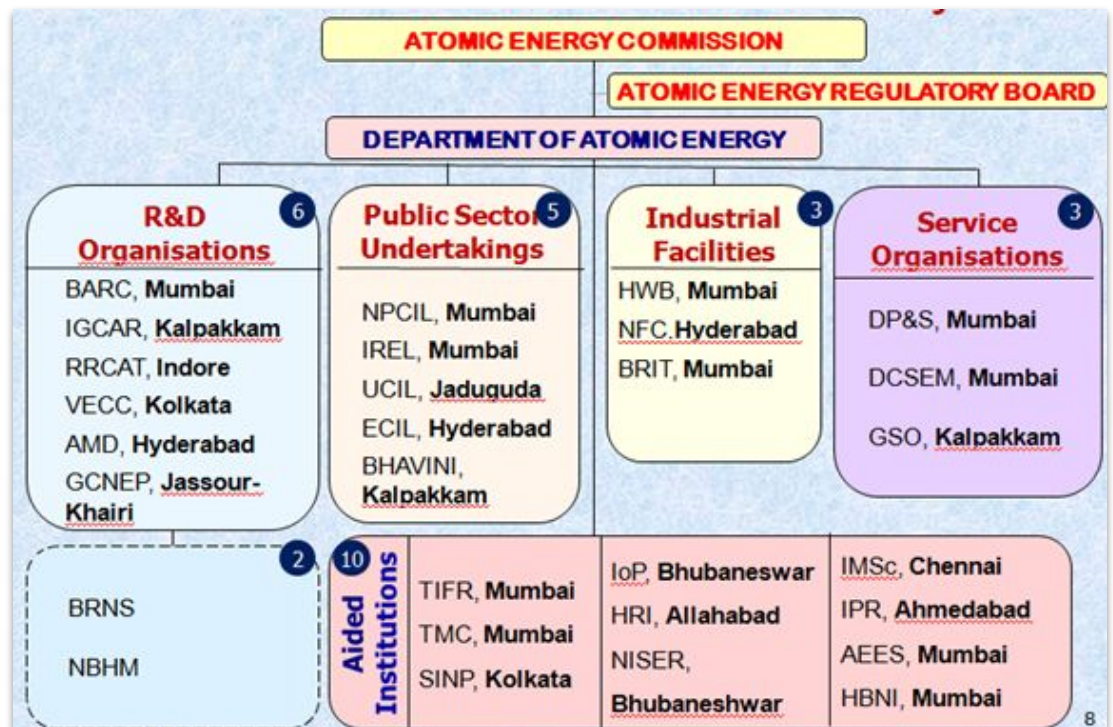


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India's Current Nuclear Power Framework

Law	Atomic Energy Act, 1962
Key Public Sector Operators	<ol style="list-style-type: none"> 1 NPCIL – Nuclear Power Corporation of India Ltd. 2 BHAVINI – Bharatiya Nabhikiya Vidyut Nigam Ltd. 3 ASHVINI – NPCIL-NTPC JV
Foreign Involvement Allowed?	Limited Only via G-to-G agreements post 2008 Indo-US Nuclear Deal
Private Sector Role	<p>✗ Not allowed to build/ operate plants</p> <p>Can supply equipment or provide services</p>
Civil Liability Framework	<i>Civil Liability for Nuclear Damage Act, 2010</i> → imposes liability on suppliers for accidents



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Why New Legislation Now?

THE Hindu

Budget 2025: FM opens up Nuclear power sector to private players and incentivises distribution reforms

Boosting state's power distribution and opening the nuclear power sector was announced by Union Finance minister Nirmala Sitharaman in her eighth Budget speech.

1 Feb 2025



Energy Sector Reforms

Atomic Energy Act and the Civil Liability for Nuclear Damage Act to be amended to realize goal of development of at least 100 GW of nuclear energy by 2047

- Nuclear Energy Mission for research & development of Small Modular Reactors (SMR) to be set up, with outlay of Rs. 20,000 crore; at least 5 indigenously developed SMRs to be operationalized by 2033



विद्युत मंत्रालय
MINISTRY OF
POWER

#ViksitBharatBudget2025

NUCLEAR ENERGY MISSION FOR VIKSIT BHARAT

- A **Nuclear Energy Mission** for research & development of Small Modular Reactors (SMR) to be set up
- At least **5 indigenously developed SMRs** will be operationalised by 2033
- Outlay of **Rs. 20,000 crore** is proposed for the Mission

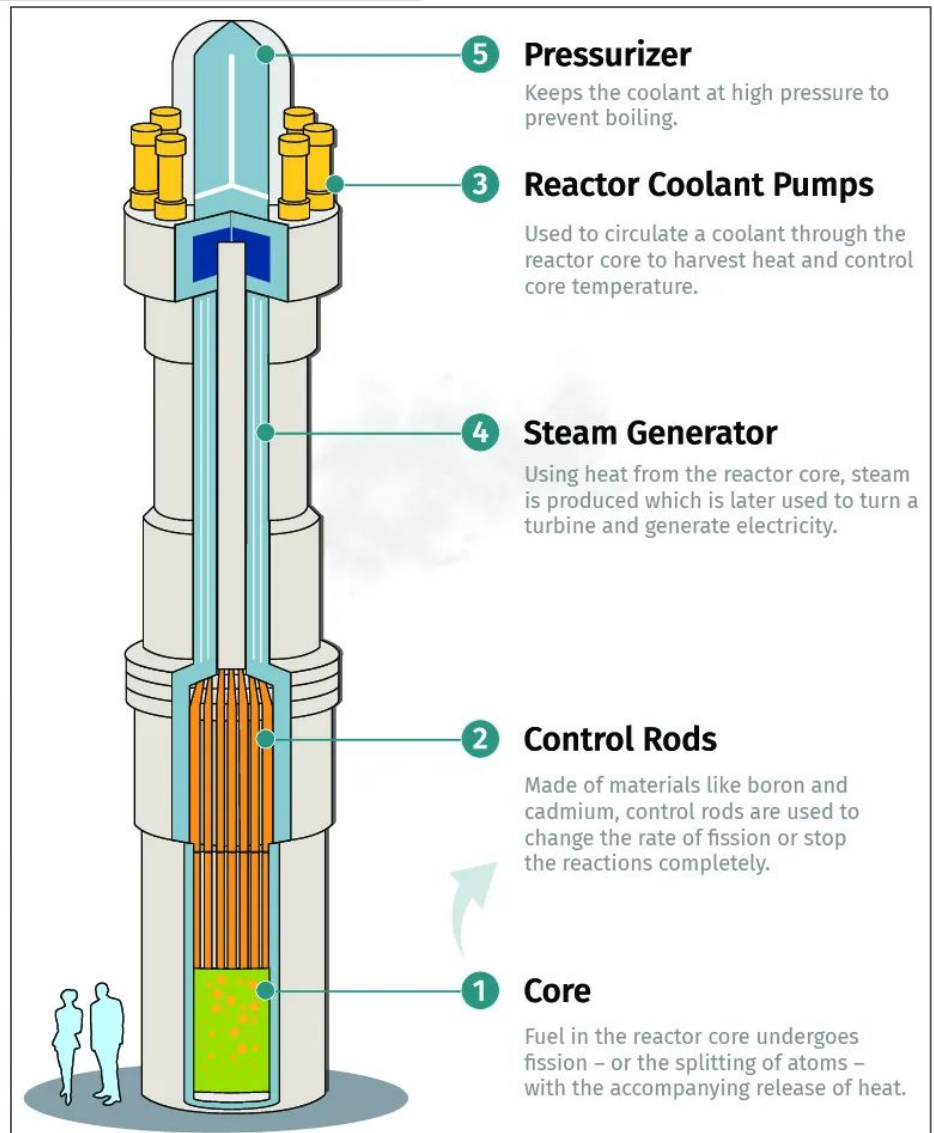
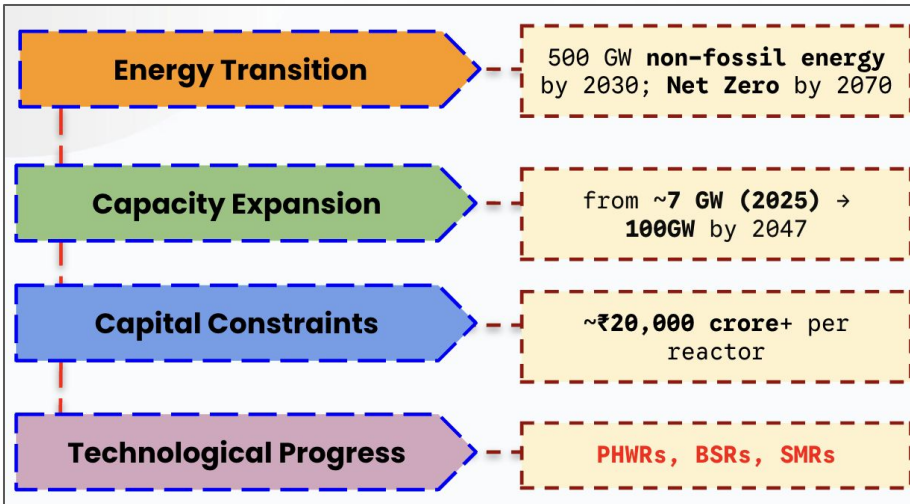
officeofpower



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Why New Legislation Now?



Private Push in India's Nuclear Power

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Key Issues Under Deliberation

- The Union Budget 2025-26 emphasizes nuclear energy as a crucial part of India's long-term energy transition strategy
- The target is to achieve **100 GW nuclear power capacity by 2047** while ensuring energy reliability and reducing fossil fuel dependency
- The Nuclear Energy Mission for **Viksit Bharat** aims to enhance domestic nuclear capabilities and encourage private sector participation
- The government has allocated ₹20,000 crore for research and development of **Small Modular Reactors (SMRs)** with a goal to develop at least 5 indigenously designed operational SMRs by 2033

Radioactive Waste Management

Who will be **responsible**?
Storage, transport, and disposal?
Central waste repository
Long-term liability and insurance

Reprocessing of Spent Nuclear Fuel

India's "closed fuel cycle" **Pu/U**
Tight **IAEA** oversight
Should private firms be allowed?

R&D in Core Nuclear Technologies

DAE/BARC **monopoly**
IF private sector can:

- Co-develop reactor designs
- Invest in fusion, SMR R&D
- Export partnerships

Legal Challenges

- Atomic Energy Act, 1962
- CLNDA, 2010 (CSC Conv)
- Environmental Rules

Liability Issue Explained

 **The Core Concern:** Who Pays After a Nuclear Accident?

Country	Approach	Liability Cap
India (CLND Act, 2010)	Operator + Supplier both liable	No clear cap → "unlimited"
USA / CSC Convention	Operator-only liability; suppliers exempt	Liability capped, govt support assured
France / Japan	Operator-only, strict but limited liability	Limited via insurance & compensation funds

💡 **Foreign suppliers** (e.g., GE, Westinghouse) avoid India due to this "supplier liability" fear.



Private Push in India's Nuclear Power



CONTEXT: Government of India is drafting a new Nuclear Energy Bill to allow private sector participation in building and operating nuclear power plants

The Big Picture: Future Technologies

The Bharat Small Reactor (BSR) Model		Reactor Type	Purpose	Example
Capacity	220 MW PHWR	SMRs	Repurpose retiring coal plants, power remote areas	BARC
Purpose	Captive power for industrial clusters (steel, metals, etc.)			
Private Role	Provide land, cooling water, and investment capital	High-Temp Gas-Cooled Reactors	Hydrogen co-generation	R&D stage
Public Role	Design, safety, quality assurance, operation	Molten Salt Reactors	Utilise thorium reserves	Prototype planned under DAE
Goal	Industrial decarbonisation + energy security			
Timeline	Deployment by 2032–35 likely			

Way Ahead: Strategy

Clear Legal and Regulatory Framework

- Public safety and accountability
- Investor confidence
- Alignment with global conventions

AERB and CAG reports: dedicated Nuclear Regulatory Authority of India

Define Liability and Waste Management

- Define capped liability limits
- Government indemnity

National Radioactive Waste Management Agency

Spent fuel reprocessing: DAE + private technical partnerships

Define Public–Private Partnership Model

Model	NPCIL's Role	Private Role
Joint Venture	Design, operation, and safety compliance	Capital, land, and water resources
BOT	Govt retains ownership	Private constructs and maintains for fixed years
Captive Power	NPCIL designs reactors near major industries	Steel/aluminium firms provide land & cooling water



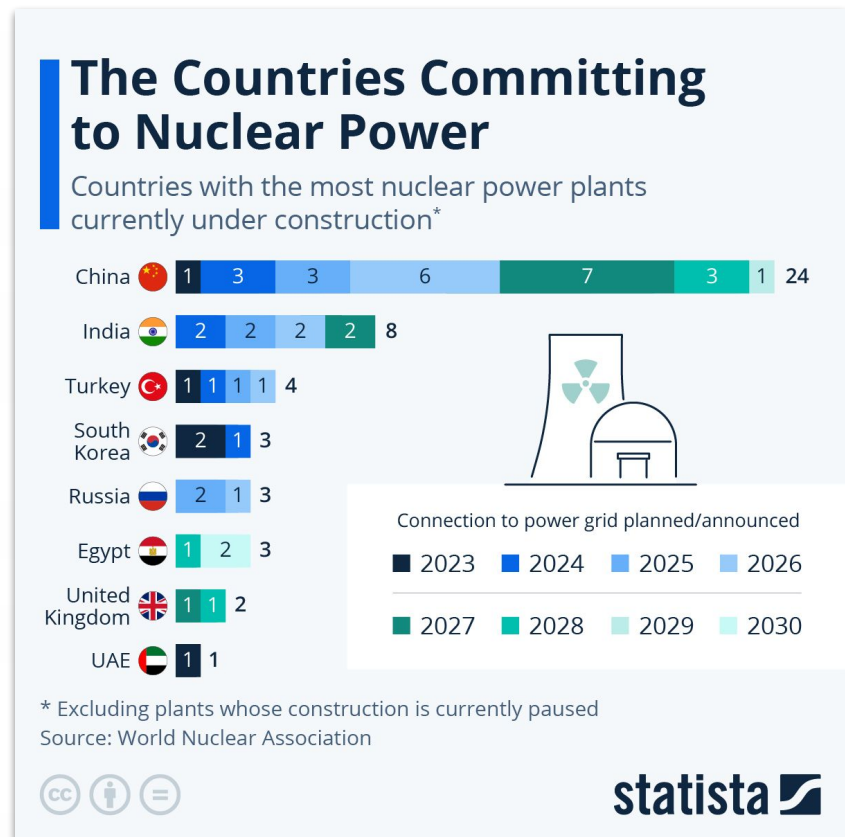
Private Push in India's Nuclear Power



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Mains Practice Question

India's nuclear journey is entering a new phase — from a state-monopoly model to a collaborative, innovation-driven ecosystem. Comment in the light of India's proposed Nuclear Bill. (15 Marks, 250 words)



Crimes against children



CONTEXT: Crimes against children rose by **9.2%** in **2023** — NCRB

Key Findings from NCRB 2023

Indicator	2023 Data	% / Notes
Total cases	1,77,335	↑ 9.2% from 2022
Crime rate (per lakh child)	39.9	(2022: 36.6)
Top Crimes	- Kidnapping & Abduction: (45%) - POCSO Act offences: (38.2%)	
Victims (under 18)	40,846	762 below 6 yrs; 21,411 aged 16-18
Rape-related cases	40,434	39,076 by known persons
Abduction for marriage	14,637	Mostly minor girls
Child marriage cases	6,038	
Child labour cases	1,390	
Murder of children	1,219 cases (1,384 victims)	89 linked to rape/POCSO
Charge-sheet rate	64.3%	TN (93.7%), AP (91.3%), Del (31.7%)
Pending investigations	80,198 (32.2%)	Of 2,57,756 total cases investigated

State/UT	Total Cases	Crime Rate (per lakh child)	Highlights
Madhya Pradesh	22,393	77.9	Highest total cases
Maharashtra	22,390	62.0	2nd highest
Uttar Pradesh	18,852	22.1	Large population but lower rate
Assam	10,174	84.2	Highest rate among states
Bihar	9,906	35.2	Consistent increase
Delhi	7,769	140.3	Very high concentration



Crimes against children

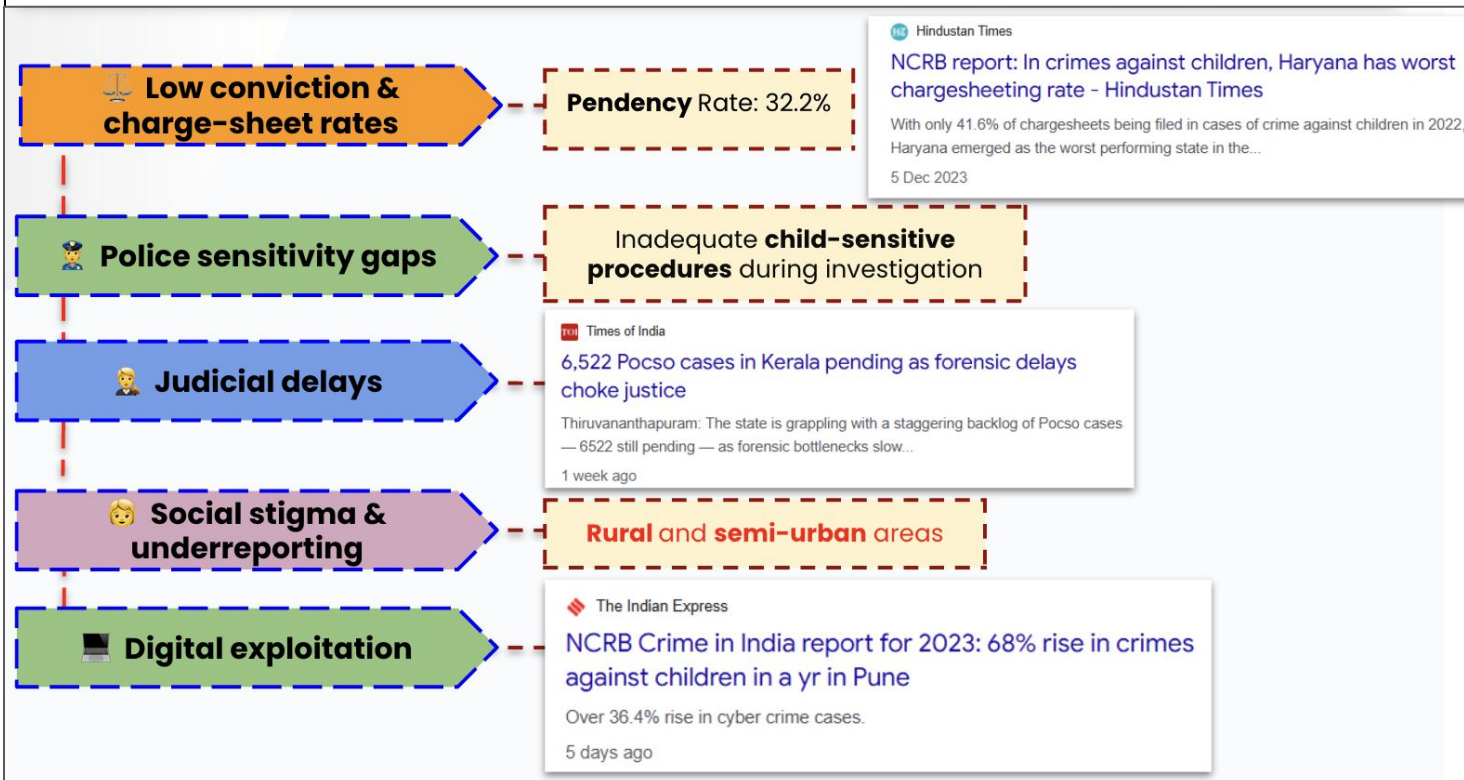


CONTEXT: Crimes against children rose by **9.2%** in **2023** — NCRB

Legal Framework Protecting Children in India

Law	Year	Objective
POCSO Act	2012	Protection from sexual offences (rape, assault, harassment).
Juvenile Justice (Care & Protection of Children) Act	2015	Care, rehabilitation, and protection of children in conflict or need.
Child Labour (Prohibition & Regulation) Act	1986 (amended 2016)	Prohibits employment of children in hazardous occupations.
Prohibition of Child Marriage Act	2006	Prevents and punishes child marriages.
Right to Education Act	2009	Ensures free and compulsory education for 6–14 age group.

Systemic Challenges



Crimes against children

CONTEXT: Crimes against children rose by **9.2%** in **2023** — NCRB

Government & Institutional Efforts

e-POCSO Courts / Fast-Track Courts	Speedy disposal of sexual offence cases.
Childline 1098	24x7 helpline for reporting abuse or distress.
NCPCR & SCPCRs	National/State Commissions for Protection of Child Rights
SAMPARK Portal	Integration of child welfare data .
Beti Bachao Beti Padhao	Addresses female foeticide and gender imbalance .
Mission Vatsalya (2021)	Umbrella child protection scheme covering shelter, rehabilitation, adoption.



Strengthening Child Protection Laws

Amendments to the Juvenile Justice (Care & Protection of Children) Act, 2015 Approved

- To introduce measures for strengthening Child Protection set-up
- Amendments include authorizing District Magistrate including ADM to issue adoption orders, in order to ensure speedy disposal of cases
- Amendment also empowers the DMs to make synergized efforts in favour of children in distress conditions
- Several difficulties faced in the implementation of various provisions of the Act have also been addressed

Way Forward: A Multi-Pronged Strategy

Pillar	Action Plan
Prevention	<ol style="list-style-type: none"> Mandate age-appropriate safety and sex education in schools. Large-scale campaigns targeting parents on the role of "known offenders." Digital Literacy
Protection	<ol style="list-style-type: none"> Safe Institutional Spaces: Strict background checks (Police Verification) for staff in schools, childcare institutions. Revitalize District and State Child Protection Units. Expand the number of POCSO fast-track courts.
Legal & Institutional Reforms	<ol style="list-style-type: none"> Improve Investigation + Specialised training for police Fill vacancies in judiciary and police. Use of Technology
Data-Driven Governance	<ol style="list-style-type: none"> Robust Data Analysis: to identify hotspots. Monitor Implementation



Crimes against children



CONTEXT: Crimes against children rose by 9.2% in 2023 — NCRB

Mains Practice Question

The NCRB data on crimes against children reveals a crisis of trust and implementation. Critically analyze. (15 Marks, 250 words)

The UN Common Understanding on a Human Rights-Based Approach

Goal

All programmes of development cooperation, policies, and technical assistance should further the realization of human rights as laid down in the Universal Declaration of Human Rights and other international human rights instruments.

Process

Human rights standards and principles guide all development cooperation and programming in all sectors and phases of the programming process.

Outcome

Development cooperation contributes to the development of the capacities of 'duty-bearers' to meet their obligations and/or of 'rights-holders' to claim their rights

Source: OHCHR/WHO



Syllabus: GS Paper 3: Government Budgeting
Newspaper: The Hindu, Page No. 13



What is Securities Transaction Tax (STT)?

Intro	Finance Act, 2004
Effective From	1st October 2004
Administered by	CBDT, Ministry of Finance
Nature	A direct tax ; purchase/sale of securities on a recognized stock exchange in India
Rate	Varies by transaction type
Collected By	The stock exchange → remitted to GoI
Objective	💡 To ensure transparent tax collection & curb capital gains tax evasion @stock mkts

Type of Security	STT Rate	Example
Derivatives	0.01% on sale	A trader sells one lot of Nifty futures at ₹17,000, totaling ₹8,50,000. STT = $0.01\% \times ₹8,50,000 = ₹85$
Equity Shares	0.1% on sale	A trader sells shares worth ₹1,00,000. STT = $0.1\% \times ₹1,00,000 = ₹100$
Exchange Traded Funds (ETFs)	0.001% on sale	A trader sells ETFs worth ₹1,00,000. STT = $0.001\% \times ₹1,00,000 = ₹1$
Equity-Oriented Mutual Funds	0.001% on redemption	A mutual fund redeems units worth ₹1,00,000. STT = $0.001\% \times ₹1,00,000 = ₹1$



Legal Issue: What is Being Challenged?

🌱 (A) Violation of Fundamental Rights

Article	Concern
Article 14	Unequal and arbitrary tax burden → discriminatory against traders
Article 19(1)(g)	Restricts freedom to practice any profession or trade
Article 21	Undermines right to live with dignity (due to excessive tax burden)

What are the features of STT?



Syllabus: GS Paper 3: Government Budgeting
Newspaper: The Hindu, Page No. 13

Legal Issue: What is Being Challenged?

(B) Double Taxation Claim

Transaction	Tax Type	Nature
Profit from share sale	Capital Gains Tax	On income/profit
Execution of trade	STT	On transaction, irrespective of profit/loss

(C) Tax Without Profit (Punitive in Nature)

No **refund** or **adjustment** mechanism exists — unlike TDS

“The current petition is instead questioning the legality of the tax imposed in the form of STT... Firstly, it violates the principle of double taxation as the petitioner (a stock market trader) pays capital gains tax on the profit made in the market and then also has to pay STT, over and above this capital gains tax alrea-

“Every tax in India is on the profit at the year-end but STT is applicable even if the stock market trader is operating in a loss. STT was introduced in 2004 to combat tax evasion in the stock market. This means that STT to stock market participants is what TDS is to salaried individuals. But the problem is that the TDS is refunded at the end of the year or adjusted with the income tax but no such provision is made for STT and the trader has to pay both,” Mr. Juneja noted.



Jal Jeevan + GATI Shakti integration



Syllabus: GS Paper 2: Welfare schemes for vulnerable sections

Newspaper: Indian Express, Page No. 5

Background: Jal Jeevan Mission

Launch Year	2019
Implementing Ministry	Ministry of Jal Shakti
Objective	Provide Functional Household Tap Connection (FHTC) to every rural household by 2024
Target	17.87 crore rural households
Water Norm	55 litres per capita per day (lpcd)
Water Quality Standard	BIS IS:10500
Mission Components	Source strengthening 🌊, water treatment 🏭, distribution 🚰, greywater management ♻️
Financial Outlay (2019–24)	₹3.60 lakh crore (₹2.08 lakh crore Centre + ₹1.52 lakh crore States)



PM Gati Shakti Platform – The Backbone of Integration

Launched: 2021	
Developed by: BISAG-N (Bhaskaracharya National Institute for Space Applications and Geo-informatics)	
Nature	GIS-based National Master Plan integrating 200+ infrastructure data layers
Objective	Achieve holistic planning and synchronized implementation across sectors – transport, power, logistics, and now, water 🚰
Key Capabilities	<ul style="list-style-type: none"> Real-time GIS Mapping Data-driven decision support Cross-sectoral convergence

GatiShakti myGov

Pragati Ki Gati Bharat Ki Shakti

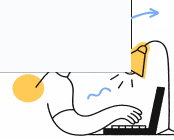
Connecting Pillars of New India

- To cover infrastructure initiatives like Bharatmala, Sagarmala, Ports, UDAN, Economic Zones, Railways etc
- Social infrastructure such as hospitals, universities to be integrated in the next phase
- To develop new possibilities for the creation of future economic zones

UPSC PYQ (P) 2020

In India, the term “Public Key Infrastructure” is used in the context of

- Digital security infrastructure
- Food security infrastructure
- Health care and education infrastructure
- Telecommunication and transportation infrastructure



Jal Jeevan + GATI Shakti integration



Syllabus: GS Paper 2: Welfare schemes for vulnerable sections

Newspaper: Indian Express, Page No. 5



What the New MoA Envisions

THE UNION government plans to map all drinking water assets including pipelines created under its Jal Jeevan Mission (JJM) on PM Gati Shakti, a Geographic Information System-based platform.

The Department of Drinking Water and Sanitation (DDWS) under the Jal Shakti Ministry Monday signed a memorandum of agreement with Bhaskaracharya National Institute for Space Applications and Geo-informatics (BISAG-N), an autonomous body under the Ministry of Electronics and Information Technology, which has developed

In a statement, the Jal Shakti Ministry said: "The partnership marks a significant step towards the development of a GIS-integrated, decision-support platform for Jal Jeevan Mission and Swachh Bharat Mission (Grameen) portals. The new plat-



Key Provisions

GIS Integration

Mapping of all JJM assets (pipelines, treatment plants, water sources) on PM Gati Shakti

Unique Scheme IDs

Every **Rural Piped Water Supply Scheme** to get a unique digital ID

Granular Monitoring

Enables **village-level and household-level tracking** of water delivery

Tech Features

Ground control surveys, digital photogrammetry, vector data capture, thematic mapping

Support Functions (by BISAG-N)

Database design, map creation, data migration, software development, system integration



CCI study on AI Collusion in India



Syllabus: GS Paper 3: Indian Economy
Newspaper: Indian Express, Page No. 15

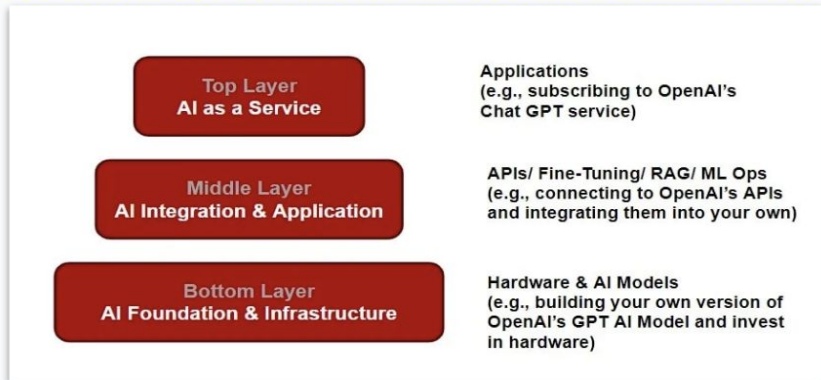


Collusion & Gatekeeping in AI

Why AI Matters for Competition?	Examples
Foundational Layer	AI models and infrastructure (data, compute power, algorithms)
Application Layer	End-user apps built using foundational models

- ◆ **Big Tech** Domination
- ◆ **67%** of *Indian AI start-ups* are at the application layer

THE POTENTIAL for big enterprises to have an unfair market advantage in artificial intelligence (AI) due to their control over data sets and other computational resources, among other factors was flagged as a key “structural challenge” faced by India’s burgeoning AI market, according to a study report released by the Competition Commission of India (CCI).



⚠ Key Challenges Identified by the CCI Report

'KEY CONCERNS AROUND AI'

■ According to a survey conducted while framing the report, AI-facilitated collusion was the biggest concern across stakeholders, followed by price discrimination and increased entry barriers

- 1 **Algorithmic Collusion** 🤖
 - algo may learn to **fix prices** without human coordination
- 2 **Data Concentration & Big Tech Advantage** 📊
 - Proprietary datasets, cloud infra, computing power
- 3 **Entry Barriers for Startups** 🚫
 - Dependence on **hyperscalers** (Big Tech cloud services)
- 4 **Lack of Transparency in AI Systems** 🔍



Examples of Algorithmic Collusion (Global)

Eturas case	EU	Online travel agencies used a common software
Uber surge pricing	U.S.	AI-driven pricing
Airline	Global	Dynamic algorithms learned to keep prices high.

CCI study on AI Collusion in India



Syllabus: GS Paper 3: Indian Economy
Newspaper: Indian Express, Page No. 15



CCI's Recommendations & Proposed Framework



1 Self-Regulation & Governance

- AI companies should **develop voluntary codes of conduct**.
- Create internal **AI Ethics Boards**.
- Adopt **AI explainability standards**.



3 Transparency & Disclosure Norms

- Document **how AI is used** in decision-making.
- Declare **main parameters behind algorithmic decisions** (e.g., pricing, ranking).
- Share **explainable summaries** with regulators to reduce "information asymmetry."



2 Self-Audits & Documentation

Algorithm Design

Objectives, data sources, bias-prevention mechanisms

Access Protocols

Who can modify algorithms & how

Outcome Testing

Are prices or outputs unintentionally collusive?

Periodic Reviews

Regular evaluation of market effects



4 Proportionate Regulation

- Avoid overregulation** that stifles innovation.
- Use **light-touch**, adaptive rules.
- Blend **regulation + innovation** freedom.



Syllabus: GS Paper 2: Important International institutions, agencies and fora
Newspaper: Indian Express, Page No. 13



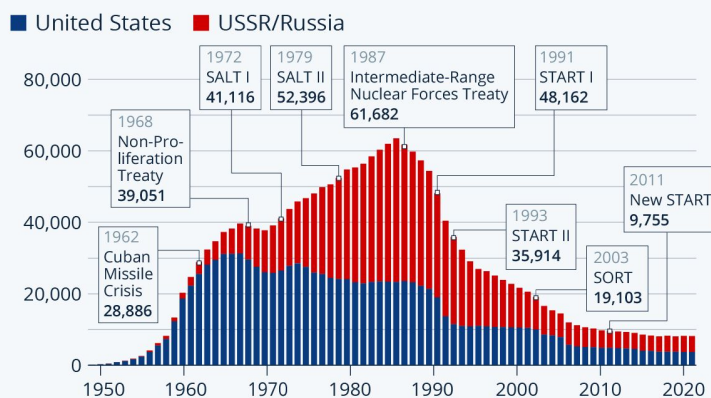
What is the New START Treaty?

Their arms control treaties were born out of **fear of nuclear war after the 1962 Cuban Missile Crisis**. Greater transparency about the opponent's arsenal was intended to reduce the scope for misunderstanding and **slow the arms race**.

Now, with all major nuclear powers seeking to modernise arsenals, and Russia and the West at strategic loggerheads for over a decade, the treaties have almost all crumbled away.

How U.S. and Russian Nuclear Arsenals Have Evolved

Estimated nuclear warhead stockpiles of the United States and USSR/Russia



Excluding retired but still intact warheads in the queue for dismantlement.
Source: Federation of American Scientists



statista

What is the START Treaty?

It was signed by then-presidents Barack Obama and Dmitry Medvedev in Prague in 2010; it came into **force in 2011**. The treaty **concerns strategic weapons**: usually long-range weapons designed to influence the outcome of a war, not merely a battle, by destroying power centres, command and control facilities, or key infrastructure.

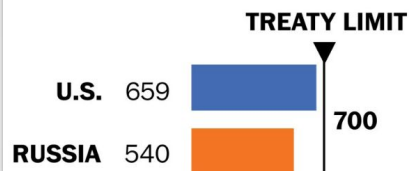
Extended for five years in 2021, the **treaty expires on February 5, 2026**.

Why does it matter?

Russia and the US together have about **87% of the global inventory of nuclear weapons** — enough to destroy the world many times over. **Russia has 5,459 nuclear warheads** while the **United States has 5,177**, according to the Federation of American Scientists (FAS).

Limitations on strategic offensive arms under the New START accord

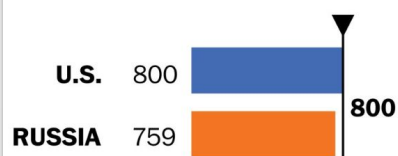
Deployed intercontinental ballistic missiles (ICBMs), deployed submarine-launched ballistic missiles (SLBMs) and deployed heavy bombers equipped for nuclear armaments.



Nuclear warheads on deployed ICBMs, deployed SLBMs and deployed heavy bombers equipped for nuclear armaments (each such heavy bomber is counted as one warhead).



Deployed and non-deployed ICBM launchers, deployed and non-deployed SLBM launchers and deployed and non-deployed heavy bombers.



Syllabus: GS Paper 2: Important International institutions, agencies and fora
Newspaper: Indian Express, Page No. 13



Current Crisis: A Crumbling Arms Control Architecture

A Timeline of Disintegration:

- **2002:** U.S. withdraws from Anti-Ballistic Missile Treaty.
- **2019:** U.S. withdraws from Intermediate-Range Nuclear Forces Treaty after accusing Russia of violations.
- **2020:** U.S. withdraws from Open Skies Treaty.
- **2023:** Russia suspended its participation in New START

US PRESIDENT Donald Trump on Sunday said Russian President Vladimir Putin's September offer to voluntarily maintain limits for a year on deployed strategic nuclear weapons "sounds like a good idea".

Having long declined to address arms control in isolation, Putin made the offer based on the New START Treaty, the last remaining Russian-US arms control treaty.

What are the hurdles?

Putin said further voluntary limits would depend on US actions. He has also said that Washington's "preparations for deploying interceptors in space" could undermine efforts to maintain the status quo. Trump said in May he had selected a design for the \$175-billion Golden Dome project, which would create a network of satellites to detect, track and potentially intercept incoming missiles.

U.S. "Golden Dome"

Tactical (Non-strategic) Nuclear Weapons

Inclusion of China

Possibility of Nuclear Testing

Missile deployments eliminated by the INF Treaty

■ NATO countries ■ Former Warsaw Pact countries

West Germany

Cruise: **48** deployed
Pershing II: **108** deployed
Short-Range INF
Pershing Ia: **72** deployed

United Kingdom

Cruise: **96** deployed

Belgium

Cruise: **16** deployed

Italy

Cruise: **96** deployed

East Germany/Czechoslovakia

Short-Range INF
SS-12: **93**
SS-23: **53**

Soviet Union

SS-20: **243** deployed
SS-4: **65**
Short-Range INF
SS-12: **127**
SS-23: **114**

Source: Arms Control Association | Historical map

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In India, why are some nuclear reactors kept under "IAEA safeguards" while others are not?

- (a) Some use uranium and others use thorium
- (b) Some use imported uranium and others use domestic supplies
- (c) Some are operated by foreign enterprises and others are operated by domestic enterprises
- (d) Some are State-owned and others are privately owned

What are IAEA inspections?

Set of activities carried out by IAEA inspectors to verify that nuclear material subject to IAEA safeguards remains in peaceful activities

States submit *nuclear material accounting reports* to IAEA (initial inventory and any changes thereto)

Depending on quantity and type of nuclear material, IAEA conducts inspections at regular intervals to verify

Consistency of facility records and State reports

Location, identity, quantity and composition of declared nuclear material;

Syllabus: GS Paper 3: Biotechnology
Newspaper: The Hindu, Page No. 1



Understanding the Immune System

Innate Immunity

First line of defense – nonspecific

Adaptive Immunity

Learns & remembers – **T & B lymphocytes**.

T Cells

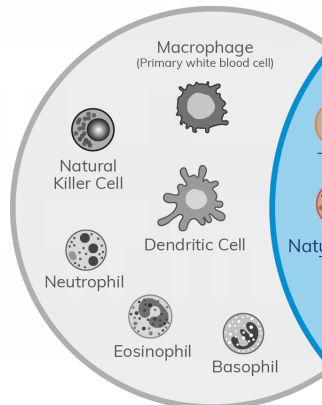
Produced in **bone marrow**, mature in **thymus** → types include: – Helper T cells (CD4⁺) – Cytotoxic T cells (CD8⁺) – **Regulatory T cells (Tregs)**

Concept of Immune Tolerance

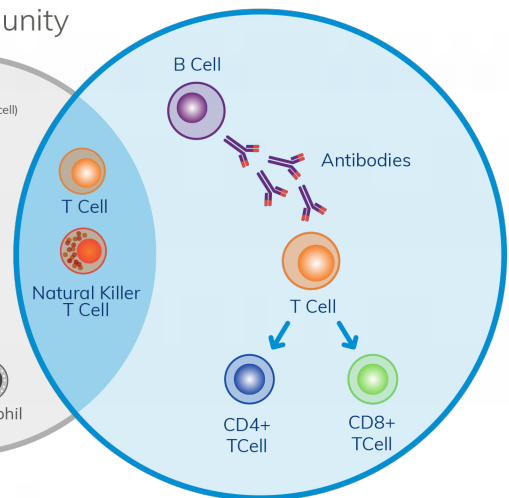
Central Tolerance

Peripheral Tolerance

INNATE Immunity



ADAPTIVE Immunity



✖ **Without tolerance**, the immune system may **attack body tissues**, causing **autoimmune diseases**

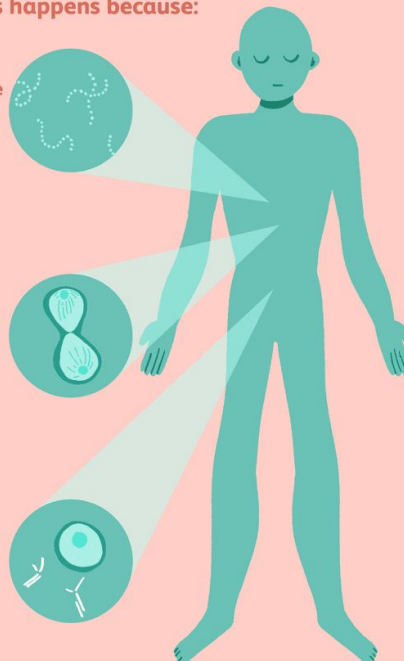
Autoimmune Disease:

Immune system creates antibodies that attack your own cells. This happens because:

A foreign substance resembles bodily substances

Normal body cells become altered

Lymphocytes malfunction and make abnormal antibodies



Syllabus: GS Paper 3: Biotechnology
Newspaper: The Hindu, Page No. 1



Nobel Prize 2025 in Medicine / Physiology

1995 – Shimon Sakaguchi's **Tregs** in mice

2011 – Brunkow & Ramsdell's **Foxp3** (gene mutation)

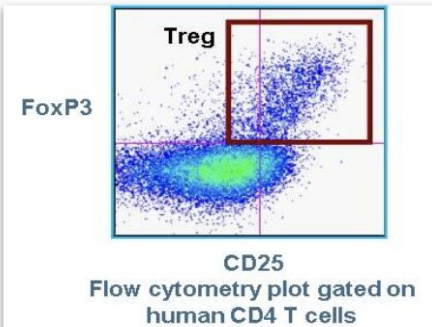
2013 – Sakaguchi Connects **Peripheral immune tolerance** = Tregs (regulated by Foxp3 gene)

What Are Regulatory Tregs?

Type	Subset of CD4⁺ T lymphocytes
Marker Gene	Foxp3 (Forkhead box P3)
Function	Suppress overactive immune responses and prevent autoimmunity

⚡ Diseases Related to Treg / Foxp3 Dysfunction

IPEX Syndrome	Mutation in Foxp3 → absence of functional Tregs
Type-1 Diabetes	Loss of self-tolerance in pancreatic β -cells
Multiple Sclerosis	Impaired Treg function → neural inflammation
Lupus	Overactive immune cells due to reduced Treg suppression
Cancer	Tumours hijack Tregs to suppress anti-tumour immunity



UPSC PYQ (P) 2021

The term 'ACE2' is talked about in the context of

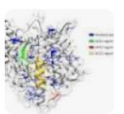
- [A] Genes introduced in the genetically modified plants
- [B] Development of India's own satellite.
- [C] Radio collars for wildlife tracking
- [D] Spread of viral diseases

Nature

ACE2 gene variants may underlie interindividual variability and susceptibility to COVID-19 in the Italian population

These findings suggest that a predisposing genetic background may contribute to the observed interindividual clinical variability associated with COVID-19.

17 Jul 2020



Q1. Regarding India's nuclear power sector, consider the following statements:

1. The Atomic Energy Act, 1962 allows private companies to build and operate nuclear power plants in India.
2. India has operational nuclear power plants in both the northern and southern regions of the country.
3. India's first indigenously designed 700 MWe PHWR was commissioned at Kakrapar Atomic Power Station (KAPS).

Which of the statements given above are correct?

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

Answer: b

Q2. Regarding the National Commission for Protection of Child Rights (NCPCR), consider the following statements:

1. NCPCR was established under the Commission for Protection of Child Rights Act, 2005.
2. It works under the administrative control of the Ministry of Women and Child Development.
3. The NCPCR can inquire into complaints about violations of child rights and recommend remedial measures.

How many of the statements given above is/are correct?

- a) Only One
- b) Only Two
- c) All Three
- d) None

Answer: c

Q3. Regarding the Securities Transaction Tax (STT) in India, consider the following statements:

1. STT is a direct tax levied on the purchase and sale of securities listed on recognised stock exchanges in India.
2. The proceeds from STT form part of the Union Government's tax revenue.
3. STT applies to both equity and derivatives transactions.
4. The rate of STT is uniform across all types of securities and transactions.

Which of the statements given above are correct?

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

Answer: b

Q4. Regarding the Jal Jeevan Mission (JJM), consider the following statements:

1. The Jal Jeevan Mission aims to provide Functional Household Tap Connections (FHTC) to every rural household in India by 2024.
2. The funding pattern of the mission between the Centre and States is 90:10 for the Himalayan and North-Eastern States and 50:50 for other States.
3. Water quality surveillance under the mission is to be undertaken only by the State Public Health Departments.

How many of the statements given above is/are correct?

- a) Only One
- b) Only Two
- c) All Three
- d) None

Answer: b

Q5. With reference to the Competition Commission of India (CCI), consider the following statements:

1. It was established under the provisions of the Competition Act, 2002, to prevent practices having an adverse effect on competition.
2. It is a statutory body functioning under the Ministry of Commerce and Industry.
3. The Chairperson and members of the CCI are appointed by the President of India on the recommendation of a committee chaired by the Prime Minister.

Which of the statements given above are correct?

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

Answer: a





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