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FORTUNE WEEKLY DIGEST

FORTUNE IAS ACADEMY

"Achieve your Dreams with Fortune"

> Polar Vortex   > Declining Fertility Level in India   > Israel – Hamas Ceasefire

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FORTUNE WEEKLY DIGEST

EDITOR'S NOTE

As UPSC aspirants, it is essential to stay updated on current affairs to excel in the examination. This **Fortune Weekly Digest (ForWarD)** brings you the latest news and developments from around the world, carefully curated and analyzed to help you prepare for the Civil Services (Main) Examination.

We understand that time is precious, and we have made sure to present the information in a concise and easy-to-understand manner.

The magazine is divided into different sections. Mains relevant topics have been covered in detail with a UPSC previous year question perspective. The jot downs are examples and interesting facts to enrich your answer writing. Cherrypicks has some key words from the week, helpful again in answer writing and essay. We have also included essay topics and sample questions to help you guage your preparation.

We have designed this magazine to best supplement the daily current affairs notes we have launched by the name of **FIND (Fortune IAS News Daily)** and **FINDER (Fortune IAS News Daily Explainer)** and the **Fortune Prelims Precise** monthly compilation. This magazine will be explained in detail and your queries addressed in a live class we conduct.

At a time when there is no dearth of current affairs materials, our hope is help you get a one-stop solution for all your current affairs needs.

This magazine is a work in progress and your feedback will be appreciated.

We hope that this magazine will serve as a valuable resource for your exam preparation and contribute to your success in the UPSC examination.

INDEX

FIRST ATTEMPT TOPPERS FROM
OUR PRELIMS CUM MAINS BATCH

KASTURI SHA
AIR 68

MANJIMA P
AIR 235

FABI RASHEED
AIR 71

SWATHI S BABU
AIR 522

OORMILA J S
AIR 561

WOMEN IN POWER

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ISRAEL-HAMAS CEASEFIRE

Syllabus: GS II - International Relations

PYQ MAPPING

Q) *'India's relations with Israel have, of late, acquired a depth and diversity, which cannot be rolled back."
Discuss* **(2018)**

Q) *How will I2U2 (India, Israel, UAE and USA) grouping transform India's position in global politics?* **(2022)**

WHY IN NEWS

After 15 months of war, **Hamas and Israel agreed to a draft ceasefire agreement** for the ongoing conflict in the Gaza Strip, marking progress towards a potential truce. The ceasefire has been reportedly brokered by Qatar and USA and will be implemented in three phases.

INTRODUCTION

The ceasefire agreement between Israel and Hamas, though a momentary relief, reveals the underlying complexities of the Israel-Palestine conflict, where temporary truces rarely lead to lasting peace. The release of prisoners and hostages serves as a symbolic gesture but does little to address the root causes of the conflict.

SHORT TAKES

➤ **Camp David Accords:** Signed on September 17, 1978, at Camp David, USA, these agreements were mediated by US President Jimmy Carter between **Egypt and Israel.** The accords led to the 1979 Egypt-Israel Peace Treaty, with Egypt recognising Israel and Israel withdrawing from the Sinai Peninsula.

1949 Armistice Lines — Jordanian occupied, Egyptian occupied, Armistice lines (LEBANON, SYRIA, WEST BANK, Jerusalem, GAZA, ISRAEL, JORDAN, EGYPT, SAUDI ARABIA) — BBC

➤ **Oslo Accords**: Signed in 1993, between **Israel and the Palestine Liberation Organization (PLO)** aimed at establishing a framework for peace and agreed on a plan to implement a **two-state solution**. The accords led to the creation of the Palestinian Authority (PA) and set out the process for Israeli withdrawal from parts of the West Bank and Gaza

➤ **Abraham Accords**: Signed on September 15, 2020, at the White House, these agreements normalised relations between **Israel, the UAE, and Bahrain**, with later participation by **Sudan and Morocco**. Mediated by the US under President Donald Trump, the accords aimed to foster peace and cooperation in the Middle East.

➤ **Hamas**:

o Hamas is an **Islamist militant organisation** and political entity founded in 1987 and has governed the Gaza Strip since 2007 after a violent power struggle with Fatah.

o Committed to the **destruction of Israel** as outlined in its 1988 charter, Hamas has conducted attacks such as suicide bombings and rocket launches, leading to its designation as a terrorist organisation by several countries.

o It receives significant backing from **Iran** aligning it with the **anti-Israel "axis of resistance"** which is an Iran-led alliance involving militias like Houthis, Hezbollah etc.

➤ **Fatah**

o Fatah is a **secular Palestinian political movement** that recognises Israel and seeks a two-state solution.

o Founded by **Yasser Arafat**, it has been a dominant force in Palestinian politics, leading the **Palestinian Liberation Organization (PLO)** and gaining international recognition.

o Focuses on diplomacy through the **Palestinian Authority (PA)**, which was established as an interim self-governing body to lead towards an independent Palestinian state, and has renounced armed resistance since the Oslo Accords.

TIMELINE OF THE ISRAEL-HAMAS CONFLICT

➤ **1920s–1940s:** Jewish immigration to **British controlled Palestine** rises due to **anti-Semitism in Europe**, culminating in the **Holocaust** (1941–1945) during the Second World War, which intensifies global support for a Jewish homeland.

➤ **1947**: UN proposes partitioning Palestine into Jewish and Arab states, but Arab nations reject it.

- A **Jewish state** (allocated 55% of the land).
- An **Arab state** (allocated 45% of the land).
- **Jerusalem** to be an internationally governed city due to its religious significance.

➤ **May 14, 1948**: Israel declares independence, leading to the 1948 Arab-Israeli War, ending in 1949 with Israel controlling 78% of the territory.

➤ **1967**: Six-Day War results in Israel capturing the Sinai Peninsula, Gaza Strip, West Bank, East Jerusalem, and Golan Heights.

➤ **1978–1979**: Israel signs Camp David Accords with Egypt, returning the Sinai Peninsula.

➤ **1993**: Oslo Accords signed where Israel accepted the Palestine Liberation Organisation as the representative of the Palestinians, and the PLO renounced terrorism and recognised Israel state. Both sides agreed that a Palestinian Authority (PA) would be established to govern Palestinian territories.

➤ **2005**: Israel withdraws from Gaza, maintaining control over its borders and airspace.

➤ **2006**: Hamas wins Palestinian elections, leading to internal conflict and Israeli-Egyptian blockade of Gaza.

➤ **2008–2021:** Major conflicts between Hamas and Israel, including Operations Cast Lead (2008-09), Pillar of Defence (2012), Protective Edge (2014), and a ceasefire in 2021.

➤ **October 7, 2023:** Hamas attacks Israel, killing over 1,200 people and taking hostages.

➤ **October 13, 2023:** Israel intensifies bombing campaign in Gaza.

➤ **November 2023–January 2025**: A series of escalations, including a truce, deadly stampede, international strikes, and the killing of key Hamas and Hezbollah leaders.

January 15, 2025: Qatar brokers a ceasefire agreement between Israel and Hamas.

THE CEASEFIRE AGREEMENT

About

➡ Hamas and Israel agreed to a **three-phase draft ceasefire plan**, **brokered by the US, Qatar, and Egypt**.

➡ The plan includes a full ceasefire, withdrawal of Israeli forces from Gaza, and a hostage-prisoner exchange.

➡ 600 trucks of humanitarian assistance are planned to enter Gaza daily during the ceasefire.

Three Phases

➡ **First Phase (42 days):**

o A **complete ceasefire is enforced for six weeks**, halting all hostilities.

o Hamas will release **33 Israeli hostages**, including women, the elderly, and wounded, in exchange for Palestinian prisoners.

- The release will occur in phases, starting with **three hostages on the first day.**

o Israel will release Palestinian prisoners, including those serving long sentences, **but not those convicted of murder**.

Philadelphi and Netzarim Corridors

Netzarim Corridor
Length: around 6.5 km

Philadelphi Corridor
Length: 14 km

Mediterranean Sea

Gaza Strip
Gaza City
Nuseirat
Deir el-Balah
Khan Yunis
Rafah

ISRAEL

EGYPT
Rafah border post
Kerem Shalom border post

5 km

Map data: OSM AFP

o   Israel is set to withdraw from key areas in Gaza, including the **Netzarim corridor but will retain presence in the Philadelphi Corridor for coordination with Egypt.**

o   Detailed talks for subsequent stages will begin on the 16th day.

➡   **Second Phase:**

o   A **permanent ceasefire** will be established.

o   Remaining hostages, primarily male soldiers, will be released

o   Israel will **fully withdraw** its forces from Gaza.

➡   **Third Phase:**

o   The third phase will involve discussions on the 'day after'.

o   Large-scale **rebuilding of infrastructure and homes** in Gaza will commence, which may take years.

o   Any remaining bodies of deceased hostages will be returned to their families

➡   **Current Progress (As of 19 January):**

o   Israel released **90 Palestinian prisoners**, including 69 women and 21 teenage boys.

o   In exchange, Hamas released **3 Israeli hostages** after nearly 15 months.

➡   **Prisoner Numbers:**

o   As of July 2024, 9,623 Palestinians were in Israeli detention, with 4,781 held without trial.

o   Prior to the war, 5,192 Palestinians were detained on security grounds, with 1,319 under administrative detention.

Analysis of the Ceasefire Agreement

➡   **Hamas's Position:** While accepting the ceasefire, Hamas continues to demand full withdrawal of Israel from Palestine territories, especially Gaza and a permanent end to war.

o   The ceasefire could give them **time to regroup**, retain local command structures, and aim for a role in Gaza governance akin to Hezbollah in Lebanon.

o   The ex-US secretary-of-state Anthony Blinken had stated that **Hamas has recruited almost as many n**ew militants as it has lost.

o   While their political leadership may have suffered highest damage Hamas has now reportedly **turned to insurgency.**

o   However, **Hamas's allies have suffered the worst**, as Hezbollah has been tamed by Israel into another agreement, Iran suffered debilitating rocket attacks, Syrian Bashar Al-Assad's fall has cut the important link for Iran with Hezbollah and then to Palestine. The **Houthis, on the other hand, continues to hold strong against Israel.**

➡   **Israeli Strategic Outcomes**:

o   Israel has twin objectives going into the war - destroy Hamas and release all hostages. They clearly failed in both.

o   Netanyahu faces **potential backlash from the far right** over prisoner releases and incomplete military objectives, while also under pressure from families of hostages.

•   3 far-right ministers of Netanyahu's cabinet have resigned over the ceasefire approval by their cabinet.

o   **Israel's victory** can be counted in the crippling of Hezbollah, Syria and Iran. The Russians who were allies of Iran have also lost hold in the region.

o   The ceasefire deal may **strengthen Israel's position in the cases** at the International Court of Justice and International Criminal Court.

➡   **United States**: Former President Trump and President Biden reportedly worked together to broker the agreement, with **Trump** highlighting it as a demonstration of **American strength** and **Biden** seeking to enhance his **diplomatic legacy.**

➡   **Humanitarian Assistance:** The ceasefire could help the Palestinians with food and medical support. Importantly, The deal accepted by both parties is not essentially different from the deal offered eight months ago.

➡   **Economy**: If the Red Sea calms down, normal freight traffic through the Suez Canal could resume, tamping down the inflationary pressure on the global economy.

o   Alongside this the discussions for the **India-Middle East Europe Economic Corridor (IMEC)** may fructify.

Prisoner Exchange Precedents of Israel

Israel has a long history of engaging in large-scale prisoner exchanges, often **trading disproportionately high numbers of Palestinian prisoners for a relatively small number of Israeli hostages or captives**. These exchanges underscore the high value Israel places on securing the return of its citizens, alive or dead, even at significant political and security costs.

Key Historical Examples of Large-Scale Prisoner Exchanges

◆ **1985 Jibril Agreement:**

o Israel released 1,150 Palestinian and Arab prisoners in exchange for three Israeli soldiers captured during the 1982 Lebanon War.

◆ **2011 Gilad Shalit Exchange:**

o Gilad Shalit, an Israeli Defence Forces (IDF) soldier, was captured by Hamas in a cross-border raid in 2006 and held for over five years.

o Israel released 1,027 Palestinian prisoners, including 280 serving life sentences for involvement in deadly attacks, in exchange for Shalit.

The 2014 Law Against Prisoner Releases

◆ **Introduction:** In response to public backlash and security concerns, the Israeli Knesset passed a law in 2014 **prohibiting the release of prisoners serving life sentences for severe crimes in future exchanges**.

◆ **Purpose:** The law aimed to deter future kidnappings by reducing the perceived value of Israeli hostages to militant groups and to prevent high-risk individuals from rejoining militant activities.

◆ **Exceptions:** Despite the law, political and humanitarian pressures have led to instances where exceptions are made, reflecting the enduring tension between security considerations and the societal imperative to secure the return of hostages.

◆ **Present Ceasefire Agreement:** The current deal involves Israel releasing at least 250 prisoners serving life sentences, a direct challenge to the 2014 law.

CONCERNS

- **Resilience of Hamas**: Despite leadership losses, Hamas has replenished its ranks, maintaining its capacity to challenge Israeli security.

- **Weak Palestinian Governance**: The Palestinian Authority remains ill-equipped to act as a cohesive stakeholder, impacting long-term political stability.

- **Political concerns**: The **absence of a political framework to ensure the ceasefire** raises concerns, with Hamas maintaining control of Gaza and resisting integration into a broader Palestinian political system.

- **Reconstruction Challenges**: Discussions on rebuilding Gaza remain premature without envisioning alternative political frameworks within Palestinian leadership.

- **Continued Hostilities**: Both Hamas and Israel **oppose a two-state solution**, perpetuating the conflict and undermining global peace efforts.

- **Risk of Escalation**: Ceasefire violations could reignite violence, with retaliatory actions worsening the humanitarian crisis.

- **Regional and International Dynamics**: The role of the Iran-backed "axis of resistance," including Hezbollah and the Houthis, raises concerns about undermining the ceasefire, potentially escalating the conflict.

- **Shift to West Bank:** Israel has switched focus to "extensive" military operations in the West Bank which they think will be the next focus of Iranian influence. They have started to control Jenin city in the Northern West Bank region of Samaria.

WAY FORWARD

- **Comprehensive Political Track**: Facilitate dialogue to integrate Hamas into a unified Palestinian political framework under international supervision.

- **Strengthening Ceasefire Agreements**: Ensure ceasefire enforcement through international monitors and mutual confidence-building measures.

- **Humanitarian Aid**: Delivering **critical food and medical supplies** to Gaza is essential as shortages have long surpassed emergency levels.

- **Political Reform**: Arab powers should work to reform and revitalise the Palestinian Authority, ensuring stronger governance and stakeholder capability.

- **Promoting Regional Integration**: Leverage initiatives like the India-Middle East-Europe Economic Corridor and the Abraham Accords to encourage economic and political cooperation.

- **Promoting the Two-State Solution**: Intensify global efforts to achieve a viable two-state solution with guarantees for both Israeli security and Palestinian sovereignty.

- **Humanitarian Focus**: Prioritise humanitarian aid and rebuilding efforts in Gaza to address civilian suffering and reduce the appeal of militancy.

- **Long-Term Vision**: The focus must shift from managing immediate crises to establishing a long-term, viable future for both Israelis and Palestinians, similar to the successful peace processes in South Africa and Ireland.

CONCLUSION

Opinion polls have consistently shown that only a minority of Palestinians support Hamas. But Hamas is deeply rooted in Palestinian society, with an armed wing, a political party, media and charities that date back to its founding in the late 1980s. Despite 15 months of bombardment Israel has failed to root out their Palestinian enemy, only to see them re-emerge after the ceasefire came into effect.

The prisoner swap, though providing short-term relief, underscores the persistent issues of legal injustices and human rights abuses in the Israel-Palestine conflict. A sustainable peace will require addressing these deeper issues, with international support for a resolution that respects both security needs and human dignity.

SAMPLE QUESTION

Q) Analyze the implications of the Israel-Hamas ceasefire agreement on the broader Middle Eastern geopolitics and the prospects for lasting peace in the region**. (10marks)(150 words)**

DRAFT UGC REGULATIONS AND FEDERALISM

Syllabus: GS II - Government Policies and Interventions

PYQ MAPPING

Q) Should the premier institutes like IITs/IIMs be allowed to retain premier status, allow more academic independence in designing courses and also decide mode/criteria of selection of students. Discuss in light of the growing challenges **(2014)**

Q) *The quality of higher education in India requires major improvements to make it internationally competitive. Do you think that the entry of foreign educational institutions would help improve the quality of higher and technical education in the country? Discuss.* **(2015)**

Q) *National Education Policy 2020 is in conformity with the Sustainable Development Goal-4 (2030). It intends to restructure and reorient the education system in India. Critically examine the statement.* **(2020)**

WHY IN NEWS

The Union Minister for Education, Shri Dharmendra Pradhan, released the **draft UGC (Minimum Qualifications for Appointment & Promotion of Teachers and Academic Staff) Regulations, 2025,** in New Delhi on January 6. The draft regulations, aligned with NEP 2020, are open for public feedback and will drive educational reforms towards achieving quality education and research in India.

INTRODUCTION

The UGC Draft Regulations 2025 propose significant changes to the framework for appointing and promoting academic staff in universities and colleges, aiming to **enhance flexibility and inclusivity in the higher education system**. However, the impact of these changes will hinge on how effectively they address concerns about transparency, autonomy, and the potential for political influence in university leadership appointments.

SHORT TAKES

➤ **Plenary law:** A statute enacted directly by a legislative body, such as Parliament or a State legislature, exercising its full law-making authority. **Eg**: University Grants Commission Act, 1956

➤ **Delegated legislation:** Refers to the **process where legislative powers are delegated** by the legislature to an executive authority or subordinate body to make detailed rules, regulations, or orders under the framework of a parent Act.

➤ **Subordinate legislation:**

o Refers to the **outcome or the actual rules, regulations, or orders made** by the executive or subordinate body under the authority granted through delegated legislation. **Eg**: The **UGC Regulations** under Section 28(1) of the **University Grants Commission Act, 1956**

o Such a subordinate legislation has to be placed before the legislature and has 3 procedures:

• **without further procedure**, where it takes effect immediately and is for information only;

• **negative resolution procedure**, where it takes effect immediately but can be annulled or modified by the legislature within a set period

• **affirmative resolution procedure**, where it takes effect only after prior approval from the legislature.

University Grants Commission (UGC) Act, 1956

♣ **Purpose**: Enacted to coordinate and determine standards in universities and establish the University Grants Commission (UGC).

♣ **Mandate of the UGC**:

o Promote and coordinate university education.

o Determine and maintain teaching, examination, and research standards.

♣ **Functions**:

o UGC **allocates funds** for the maintenance and development of universities.

o **Advises the Union and State governments** on grant allocations for general or specific purposes.

o **Collects and disseminates information** on university education in India and abroad.

o Regulates fees charged by universities.

♣ **Section 26 Provisions**:

o Empowers UGC to **make regulations consistent with the Act**.

o Includes defining qualifications for teaching staff, setting minimum instruction standards, and regulating coordination among universities.

♣ **Section 28(1) :**

o Requires that rules and regulations made under the Act be laid before Parliament for 30 days.

♣ **Subordinate Legislation**: UGC regulations are subordinate legislation and must align with the parent Act. Regulations exceeding the Act's scope are considered ultra vires and invalid.

WHAT IS UGC DRAFT REGULATIONS?

🌀 **Purpose:**

o The draft regulations aim to **set minimum qualifications for teachers and academic staff in universities and colleges**, as well as to ensure the **maintenance of standards** in higher education.

o The draft UGC 2025 regulations **aim to replace the 2018 framework** for maintaining standards in higher education.

Vice Chancellor Appointments

🌀 **Appointment Process**:

o The draft seeks to streamline and clarify the process of selecting Vice-Chancellors (VCs).

o It **empowers Governors**, who are also the Chancellors/Visitors of state universities, to **form a 3 member search-cum-selection committee.**

o The committee includes a nominee of the Governor as Chairperson, with the other members nominated by the UGC Chairman and the university's apex body (Syndicate/ Senate/Executive Council / Board of Management).

o Universities failing to comply with the regulations risk losing access to UGC schemes and the ability to offer degree programmes.

🌀 **Non-Academic VCs**:

o It proposes opening the **VC position to non-academics** with **10-plus years of experience in public administration, industry, or public policy**, to bring in diverse leadership perspectives.

• Under the existing regulations, a vice chancellor can be selected only from among academicians who have a minimum experience of **10 years as professor.**

Academic Regulations

🌀 **Waiver of UGC-NET**: The draft allows **technical institutions** to hire assistant professors without the UGC-NET qualification, provided they hold a relevant postgraduate degree(ME or MTech) with at least 55% marks.

🌀 **Relaxation for Marginalised Groups**: A 5% marks relaxation is provided at the undergraduate or postgraduate levels for SC/ST/OBC (Non-Creamy Layer), EWS, and Persons with Disabilities.

🌀 **Promoting Indian Languages:** Emphasis on using Indian languages in publishing books, book chapters, and academic qualifications.

🌀 **Holistic Evaluation**: It aims to **eliminate the score-**

based **Academic Performance Indicator (API) system**, focusing on a broader range of qualifications, including "Notable Contributions."

o **Notable contributions for assistant professor appointments:** Innovative teaching, research or teaching lab development, consultancy, sponsored

research funding, and teaching in Indian languages.

◉ **Promotion:**

o PhD is mandatory for promotion to Level 12.

o Publication requirements for associate professor positions increased from seven to eight research papers.

WHY IS IT NEEDED?

☼ **Enhanced Governance**: Revises the selection process for Vice-Chancellors with expanded eligibility criteria with transparency.

☼ **Focus on Innovation and Inclusivity:** The new guidelines aim to enhance innovation, inclusivity, flexibility, and dynamism in higher education, empowering teachers and academic staff.

☼ **Flexibility in Appointments**: Allows universities to hire and promote teachers based on diverse qualifications and specialisations, offering more opportunities for candidates.

☼ **Inclusivity and Equal Opportunities**: Provides opportunities for diverse groups, including sportspeople and individuals with disabilities, to enter the teaching profession.

☼ **Simplified Promotion Process**: Streamlines the promotion process by focusing on teaching quality, research, and professional development, ensuring transparency and fairness.

☼ **Enhanced Transparency and Accountability**: Promotes transparent processes for recruitment, promotion, and addressing grievances.

ISSUES

Vice Chancellor Appointments

◉ **Lack of Explicit Mandate in UGC Act:** The UGC Act, 1956, **does not specifically authorise** the UGC to regulate the selection or appointment of vice-chancellors, raising questions about the validity of such regulations

◉ **Centralization of Power:** The draft regulations propose centralizing the appointment of Vice Chancellors (VCs) by **vesting all powers in the Chancellor**, typically the Governor, undermining State governments' role in university governance despite education being in the Concurrent List.

o **Example**:

• **Tamil Nadu Governor R. N. Ravi** withheld key bills on higher education, delayed government orders, and pushed for UGC-nominated members in VC search committees, leading to operational challenges in universities and a case in the Supreme Court.

• **West Bengal Governor C. V. Ananda Bose** delayed VC appointments in state-run universities, prompting the Supreme Court to intervene and mandate action within three weeks

◉ **Legal and Federal Concerns:** Questions arise over **whether the UGC, as a regulatory body, can enforce penal provisions that may override university acts which are created by state legislature**, potentially violating federal principles and the basic structure doctrine.

◉ **Lack of Inclusivity in Selection Process**: The selection process for VCs, as proposed, lacks the inclusivity seen in **global best practices where faculty, staff, and students are involved** in the decision-making process.

◉ **Threat to Higher Education Autonomy**: The draft regulations, particularly the role of the Chancellor in VC appointments, may compromise the autonomy of universities and hinder the development of an independent higher education system.

◉ **Political Interference:** The proposal to make non-academics eligible for VC appointments raises concerns about the risk of **appointing individuals with political affiliations**, potentially sidelining academic qualifications and experience.

◉ **Lack of Clarity on Leadership**: The provision to appoint non-academics without a clear focus on academic leadership may result in the appointment of individuals who **lack the academic vision and leadership** necessary for running universities effectively.

◉ **Practical Implementation Challenges**: Enforcement of uniform regulations across diverse State universities with varying statutes and governance structures poses significant challenges.

◉ **Judicial Ambiguity:** Diverging judgments create uncertainty regarding the binding nature of UGC regulations.

Regarding Academic Regulations

◉ **Dilution of Subject-Specific Expertise**: Allowing interdisciplinary hiring may compromise the depth

of knowledge required for teaching core disciplines effectively.

- 👁 **Potential for Industry Overreach**: Excessive focus on industry collaboration may lead to prioritising practical knowledge over academic rigour

- 👁 **Lack of Transparency in Recruitment**: No weightage for academic qualifications, research output, or teaching experience; excessive reliance on selection committee discretion.

- 👁 **Pressure on Newly Appointed Faculty**: Newly appointed assistant professors without a PhD face challenges due to the mandatory PhD requirement for promotion.

- 👁 **Undermining Academic Integrity**

  - o Inclusion of non-academic "notable contributions" for teacher recruitment and promotions dilutes focus on teaching and research.

    Criteria like securing external funding and promoting startups disadvantage certain academic fields.

REACTION OF STATES

- ◆ **Kerala**: On January 21, the Kerala Assembly unanimously passed a resolution urging the immediate withdrawal of the draft UGC rules and called for consultations with state governments, scholars, and stakeholders.

- ◆ **Tamil Nadu:** Chief Minister M.K. Stalin criticised the draft as "oppressive," the assembly passed a resolution against it, and highlighted concerns over restrictions on state roles in appointing Vice-Chancellors and introducing UG/PG entrance exams.

- ◆ **Bihar**: JD(U), led by Chief Minister Nitish Kumar, criticised the draft for curbing the role of elected state governments in higher education.

- ◆ **Karnataka**: Cited it as anti-federal and highlighted that states bear 85% of revenue expenditure on education, making their involvement in decision-making critical.

- ◆ **West Bengal**: The state higher education department has constituted an eight-member expert committee to review the draft regulations.

JUDICIAL PRECEDENTS

- 🖊 **Scope of Article 254(1):** Article 254(1) of the Constitution addresses conflicts between central and State laws on matters in the Concurrent List (Education is in concurrent list), giving precedence to central laws over conflicting State laws.

  - • The provision **applies only to plenary laws enacted by Parliament and State legislatures**, not to delegated legislation.

- 🖊 **Ch. Tika Ramji & Others vs. State of Uttar Pradesh & Others (1956):** The Supreme Court ruled that delegated legislation, such as the Sugarcane Control Order, 1955, cannot override or repeal State laws like the U.P. Sugarcane Act, 1953, as the power of repeal is exclusively vested in Parliament.

- 🖊 **Chief Inspector of Mines vs. Karam Chand Thapar (1961)**: The Court ruled that subordinate legislation, even if treated as part of the parent Act for certain purposes, retains its subordinate character and does not become an integral part of the Act.

- 🖊 **Indian Express Newspapers (Bombay) Private Ltd. & Others vs. Union of India & Others (1984):** Subordinate legislation can be challenged if it does not conform to its parent statute, contradicts another statute, or exceeds its scope, as it must yield to plenary legislation.

- 🖊 **J.K. Industries Ltd. & Another vs. Union of India & Others (2007):** The Court reiterated that subordinate legislation must align with the parent Act and other applicable statutes, further reinforcing the precedence of plenary laws.

- 🖊 **Professor Sreejith P.S. vs. Dr. Rajasree M.S. (2022)**: In this case, the Court held that UGC regulations, once laid before Parliament, are part of the UGC Act, and any appointments that violate these regulations are invalid.

- 🖊 **Kalyani Mathivanan vs. K.V. Jeyaraj (2015)**: The Supreme Court ruled that UGC regulations **are not mandatory for State universities unless they are specifically adopted by the State**, creating a conflicting interpretation regarding the binding nature of UGC regulations.

- 🖊 **P.J. Dharmaraj vs. Church of South India (2024)**: The Court reaffirmed that UGC regulations apply only if adopted by the State, reinforcing the view that **UGC regulations are not automatically applicable to State institutions** without adoption.

WAY FORWARD

✳ **Restoring Federal Balance:** The UGC should revise the draft to involve State governments in the VC appointment process, maintaining the federal structure and preventing centralization.

✳ **Incorporating Inclusivity**: The selection process should be made more inclusive by involving faculty, staff, and students, as seen in global practices, to ensure a transparent and participatory process.

   o **Example**: In the US and UK, VC/Presidential search committees involve a wide range of university stakeholders, including faculty, staff, students, and external advisors, ensuring transparency and inclusivity.

✳ **Enhance University Autonomy:** Reforms should focus on ensuring the autonomy of universities, allowing them to function independently without undue governmental interference, except for funding and regulatory oversight.

✳ **Clarify Non-Academic Eligibility**: The eligibility criteria for non-academics should be clearly defined, ensuring that only those with a proven track record in academic leadership, rather than political affiliation, are considered for VC appointments.

✳ **Raising Research and Internationalization**: The primary challenge for VCs today is to raise the research bar and help in internationalization. The draft regulations should support these goals by fostering leadership that can elevate Indian universities to global standards

✳ **Consultation and Collaboration**: The draft should be revisited with consultations from various stakeholders, including State governments, academic experts, and education policymakers, to create a more inclusive and balanced framework for university governance.

✳ **Inclusive and Balanced Criteria:** Revise teacher recruitment and promotion criteria to prioritise teaching and research contributions over external funding or administrative tasks.

✳ **Constitutional Bench Ruling**: A Constitutional Bench of the Supreme Court should be constituted to resolve the ambiguity surrounding Article 254(1) and clarify the status of UGC regulations for State universities.

✳ **Addressing Leadership Vacuums**: Immediate steps should be taken to resolve the leadership vacuum in State universities by appointing interim VCs or resolving the deadlock between the State and the Governor, ensuring uninterrupted academic administration.

CONCLUSION

While the proposed regulations offer **several forward-looking reforms,** including enhanced governance and professional development, their successful implementation will depend on **ensuring transparency and inclusivity at every level**. The regulations have the potential to transform India's higher education landscape, provided they are refined and adapted based on **feedback from all stakeholders.**

SAMPLE QUESTION

Q) How do the UGC Draft Regulations 2025 align with the objectives of the National Education Policy (NEP)? Critically assess whether these regulations can truly address the existing issues in university governance **(10marks)(150 words)**

DECLINING FERTILITY LEVEL IN INDIA

> *Syllabus: GS II - Population and associated issues*

PYQ MAPPING

Q) *"Demographic Dividend in India will remain only theoretical unless our manpower becomes more educated, aware, skilled and creative." What measures have been taken by the government to enhance the capacity of our population to be more productive and employable?* **(2016)**

Q) *Discuss the main objectives of Population Education and point out the measures to achieve them in India in detail.* **(2021)**

WHY IN NEWS

The **Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2021** study highlights a persistent global decline in fertility, including in India, driven by socio-economic changes, shifting societal norms, and evolving personal choices, making recovery challenging even with pro-natal policies.

INTRODUCTION

The **Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2021** analyzed fertility trends across **204 countries and territories** from **1950 to 2021** and found that **fertility is declining globally** and will likely remain low even with pro-natal policies.

SHORT TAKES

➤ **Demographic transition model**

o **It explains how birth and death rates evolve as societies progress economically and technologically, impacting population dynamics.**

- Stage 1: High birth and death rates keep the population stable.

- Stage 2: Death rates drop due to medical and agricultural advancements, while birth rates remain high, causing rapid growth.

- Stage 3: Birth rates decline due to urbanization, improved child survival, contraception access, and changing family preferences, slowing population growth.

- Stage 4: Low birth and death rates result in a stable or aging population, reflecting advanced development and higher living standards.

The five stages of the demographic transition
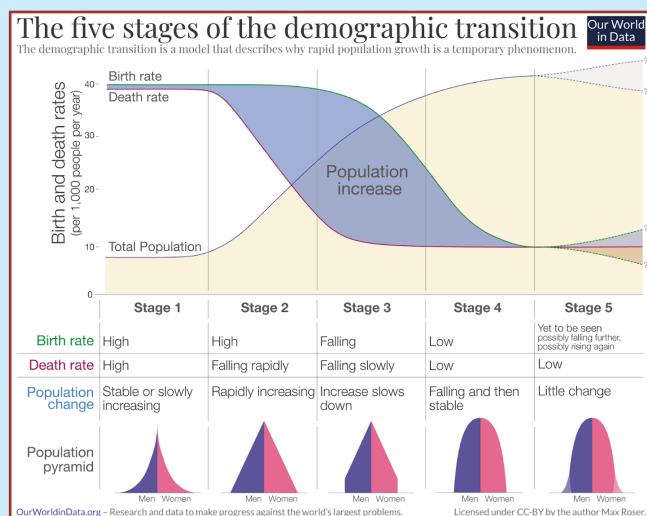
STUDY NOTED ABOUT INDIA

- India's Total Fertility Rate (TFR) has fallen from 6.18 in the 1950s to 1.9 in 2021, which is below the replacement level of 2.1 (the rate required for population stability).

- The study projects that India's TFR could drop **further to 1.04 by 2100**, indicating a future where each woman, on average, has just one child.

- The steep fertility decline is raising concerns, particularly in **southern States**, which fear **political and economic repercussions** due to **parliamentary seat redistribution** after the **2026 delimitation exercise**.

India's Demographic Transition and Population Trends

India is currently in the third stage of the demographic transition model, characterized by declining birth and death rates. This phase marks a shift from high to low levels of fertility and mortality, reflecting improvements in healthcare, education, and economic development.

Fertility Trends in India

» According to the National Family Health Survey-5 (2019–21), India's **Total Fertility Rate (TFR)** stands at **2.0**, which is below the replacement level of **2.1**.

» **TFR** represents the average number of children a woman is expected to have during her reproductive years (15–49) based on current fertility trends.

» The **replacement fertility rate** (2.1) is the level at which a population maintains its size without external migration, ensuring generational stability.

Future Population Projections

» The **World Population Prospects 2024** report by the **United Nations Department of Economic and Social Affairs (DESA)** estimates that India's **population will reach its peak at approximately 1.7 billion in the early 2060s**.

» After reaching this peak, the population is expected to **decline by around 12%**, although India will continue to be the **most populous country globally**.

REASON FOR FALLING FERTILITY RATE IN INDIA

▼ **Social and Economic Factors**

o Increased **female literacy** and **women's workforce participation**.

- According to the **National Family Health Survey (NFHS-5)** 2019-21, women with higher education (12+ years) have a TFR of 1.2, compared to 2.4 for those with no education.

o **Women's empowerment** and changing aspirations.

- The **Labour Force Participation Rate** (LFPR) for Indian women rose from 27.2% in 2017-18 to 29.3% in 2021-22.

o Greater **financial independence** and prioritization of **career over motherhood**.

▼ **Changing Attitudes Toward Marriage and Parenthood**

o More women are **marrying late** or **choosing not to marry at all**.

o Increased **infertility rates** among both men and women.

o **Higher abortion rates**, though concrete data is lacking.

▼ **Migration Trends**

o Many young Indians are migrating **abroad for education and jobs**, settling in other countries and raising families there.

o This migration further **reduces fertility rates** within India.

CHALLENGES

● **Demographic Transition and Ageing Population**

o A shrinking **young workforce** leads to **economic challenges**.

o An ageing population increases the burden on **healthcare and social security systems**.

● **India's Unique Challenge Compared to Developed Nations**

o Countries like **Japan and European nations** had **higher per capita incomes** when their populations started ageing.

o **India and other developing countries are ageing**

before they become rich, making it harder to sustain economic growth while supporting an elderly population.

o If India **fails to grow its economy quickly**, it could get **stuck in the middle-income trap**, where incomes stagnate before reaching developed-country levels.

o The **old-age dependency ratio in India could double within 50 years**, whereas it took **150-200 years in developed countries**.

● **Impact on Southern States**

o Southern States experienced **fertility decline**

earlier than the rest of India.

o **Kerala**, which achieved **replacement-level fertility in 1988**, is facing:

  • **A rapidly ageing population** (by 2036, the proportion of elderly will surpass that of children).

  • **High youth migration** due to limited economic opportunities.

• Increased **pregnancy-related complications** as more women delay childbirth.

🔴 **Labour Shortages and Migration**

o Due to a **shrinking local workforce**, Kerala is seeing **high levels of internal migration** from other Indian states.

o By **2030, migrant workers could constitute one-sixth (60 lakh) of Kerala's population**.

POSITIVE IMPACTS OF DECLINING FERTILITY RATES ON INDIA'S FUTURE

✓ **Improved Living Standards**:

o With fewer dependents, families can allocate more resources towards providing better quality education, healthcare, and housing for their children. This could enhance the overall well-being of families and improve their standard of living.

✓ **Sustainable Resource Management**:

o Slower population growth reduces the strain

on natural resources such as water, land, and energy. This can lead to more sustainable use of these resources and help address environmental challenges.

✓ **Women's Empowerment**:

o Smaller families offer women more freedom to pursue higher education and careers. This can lead to increased economic participation and empowerment, contributing to gender equality.

Population Crisis in East and South East Asia: Declining Fertility Rates and Rapid Ageing

Several **East and Southeast Asian countries** are experiencing a **severe population crisis**, characterized by **record-low fertility rates** and **rapid ageing**. Governments are **struggling to reverse the trend**, despite spending billions on pro-natal policies.

Fertility Trends in East and Southeast Asia
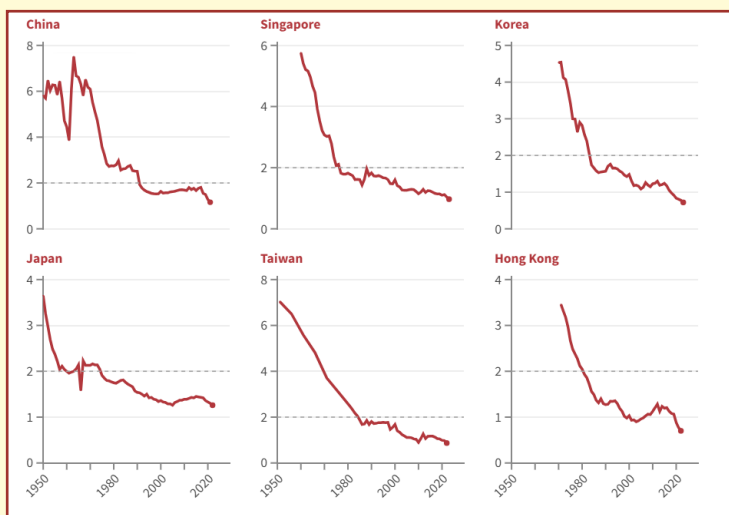
➢ **Past Fertility Rates (1950–1970):**

o Fertility rates ranged between **3.5 to 7.5** children per woman.

o Countries actively pursued **family planning measures** to control population growth.

➢ **Current Fertility Rates:**

o The **Total Fertility Rate (TFR)** is **below replacement level (2.1) in all major countries** in the region.

o **South Korea, Singapore, Hong Kong, and Taiwan** have **TFRs below 1**.

o South Korea's TFR fell to **0.72 in 2023**, while Hong Kong recorded **0.701 in 2022**—among the **lowest in the world**.

(*Chart shows the TFR in China, Singapore, South Korea, Japan, Taiwan and Hong Kong, over 50 years from 1950.*)

➢ **Comparison with Other Countries:**

o **China's TFR dropped sharply from 6.51 (1968) to 1.16 (2021)** due to strict **population control policies**.

o In contrast, **Spain's TFR fell more gradually** from 2.87 to 1.28 in the same period.

o **India's TFR dropped from over 5.7 to 2.03**, but at a slower rate than China's.

Reasons for Falling Fertility Rates

➢ **Government Policies & Family Planning Campaigns:**

  o **China's One-Child Policy** (1979–2015) and South Korea's slogan **"Even two children per family are too many"** contributed to the **sharp decline** in fertility rates.

  o Singapore's **Two-Child Policy** discouraged large families with the slogan: **"The more you have, the less they get — two is enough."**
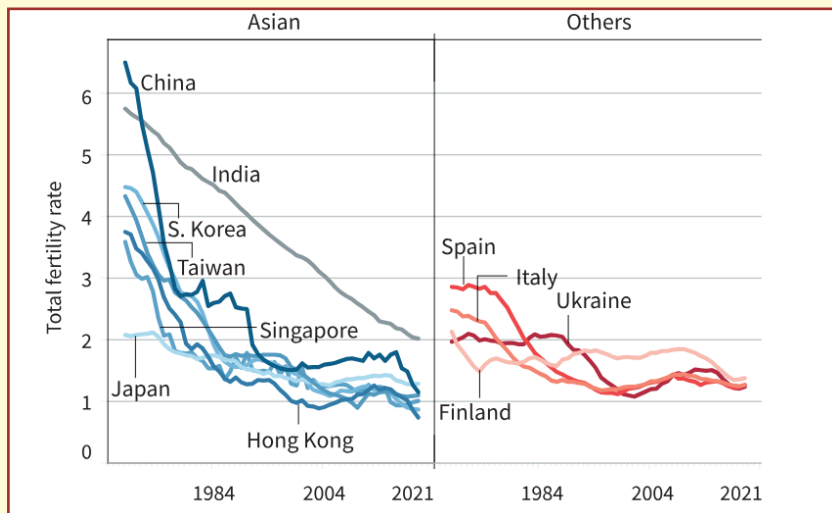
➢ **Women's Career Priorities & Marriage Delays:**

  o More **women are focusing on education and careers**, leading to **delayed or no marriages**.

  o **Marriage rates are dropping**, and **many women choose not to have children**.

(chart compares the TFR of China, Singapore, Japan, South Korea, Taiwan, Hong Kong and India with Ukraine, Finland, Italy and Spain (countries which also have among the lowest TFRs)

➢ **Rising Cost of Raising a Child:**

  o The **high cost of housing, education, and childcare** discourages couples from having children.

  o The **financial burden** and **career interruptions** due to pregnancy deter many women from motherhood.

➢ **Rapid Ageing and Population Imbalance:**

  o With fewer births, the **elderly population is growing rapidly**.

  o By the **early 2030s**, people **above 65 will make up 30% of the population** in South Korea and Hong Kong.

  o **Japan already has one-third of its population aged over 65**.

WAY FORWARD TO ADDRESS AGEING POPULATION AND DECLINING FERTILITY RATES

✳ **Skill Development for the Ageing Workforce**

  o Invest in **education and training programs** to enhance **digital literacy, creativity, and technological skills** among older workers, ensuring their continued employability in a rapidly evolving economy.

✳ **Strengthening Healthcare Infrastructure**

  o Improve **public healthcare systems** to provide **affordable and high-quality medical services** for the elderly, ensuring better health outcomes and reducing economic burdens.

✳ **Enhancing Financial Security**

  o Expand **pension schemes, social security programs, and financial literacy initiatives** to safeguard the elderly against financial instability.

✳ **Boosting Innovation and Productivity**

  o Invest in **research, technology, and entrepreneurship** to enhance productivity, compensate for labor shortages, and drive long-term economic growth.

✳ **Promoting Intergenerational Inclusion**

  o Encourage **intergenerational dialogue and social integration** to bridge the gap between young and elderly populations, fostering social cohesion.

✳ **Maximizing India's Demographic Dividend**

  o Overcome barriers like **poor education, gender inequality, skill mismatches, and jobless growth** in the informal sector.

  o Improve **education, healthcare, and female workforce participation** to harness India's young population and avoid stagnation, especially given its **134th ranking in the 2023-24 Human Development Index**.

CONCLUSION

India must proactively address declining fertility and an ageing population by **investing in skills, healthcare, social security, and workforce participation**. With **strategic policies and innovation**, the country can turn this demographic shift into an opportunity for sustainable growth and stability.

SAMPLE QUESTION

Q) The rapid decline in fertility rates and the resultant demographic transition pose significant socio-economic challenges for India. Discuss the key implications of an ageing population and suggest policy measures to mitigate its impact. **(15 marks) (250 words)**

10 YEARS OF LOKPAL

PYQ MAPPING

Q) *'A national Lokpal, however strong it may be, cannot resolve the problems of immorality in public affairs'. Discuss.* **(2013)**

WHY IN NEWS

The Foundation Day of the Lokpal of India was held for the first time on 16th January at Manekshaw Centre, New Delhi in the august presence of the Chief Justice of India, Shri Justice Sanjiv Khanna.

INTRODUCTION

The **Lokpal of India** celebrated its **11th Foundation Day** on **January 16, 2025**, marking **11 years since its establishment on January 16, 2014**, under the **Lokpal and Lokayuktas Act, 2013**. The occasion highlights the role of the Lokpal in addressing corruption complaints against public servants and promoting transparency in governance.

BACKGROUND

- **First Administrative Reforms Commission (1966):** Recommended a two-tier system with **Lokpal** at the **Union level** and **Lokayuktas** in the **States** to address corruption.

- **Lokpal and Lokayuktas Act, 2013:** Enacted to create statutory bodies for tackling corruption in public offices.

- **Establishment:** Lokpal was officially constituted on **January 16, 2014**, but its first Chairperson, **Justice Pinaki Chandra Ghosh**, was appointed only in **2019**.

Political Background

➤ The idea of **Lokpal** to fight corruption in India was often linked to **political and electoral interests**.

➤ Once these interests were served, the **commitment to fighting corruption** faded.

➤ The **2011 anti-corruption movement**, led by **Anna Hazare**, changed this narrative.

- o It was a strong **civil society movement** against corruption at all levels.

- o The movement demanded the creation of **Lokpal**, an independent anti-corruption body.

- o It also **influenced the 2014 elections**, contributing to the fall of the **Congress-led UPA government** and the rise of the **Narendra Modi-led BJP government**.

➤ As a result, Parliament passed the **Lokpal and Lokayuktas Act in 2013**, and the law came into effect on **January 16, 2014**.

Delay in Establishing Lokpal

➤ Even after the **2013 Act**, the institution remained **non-functional** for several years.

➤ In **2017**, the Supreme Court (Common Cause v. Union of India) stated that **Lokpal and Lokayuktas could strengthen anti-corruption efforts**.

➤ The judgment highlighted the **gap between legal provisions and actual implementation**, quoting Justice Krishna Iyer: *"Law is what law does, not what law says, and the moral gap between word and deed menaces people's faith in life and law."*

MANDATE AND FUNCTIONING

➡️ **Legal Authority**

o The **Lokpal and Lokayuktas Act, 2013** empowers Lokpal to:

o Investigate corruption allegations against:

- **Prime Minister**, with safeguards related to national security and public order.

- **Union Ministers, Members of Parliament, and all public officials**.

- **Entities receiving foreign contributions exceeding Rs. 10 lakh**.

o Power of superintendence & direction over any central investigation agency including CBI for cases referred to them by Lokpal.

➡️ **Composition**

o **Chairperson:** Must be a **former Chief Justice of India, a Supreme Court Judge, or a distinguished**

person with integrity and expertise.

o **Members:** Up to **8 members**, with at least **50% being judicial members** and **50% from underrepresented groups** (SC/ST/OBC, minorities, and women).

➡️ **Appointment & Tenure**

o **Appointing Authority: President of India**, based on recommendations from a **Selection Committee** consisting of:

- **Prime Minister (Chairperson)**

- **Speaker of Lok Sabha**

- **Leader of Opposition in Lok Sabha**

- **Chief Justice of India or an eminent jurist**

o **Term: 5 years** or until **70 years of age**, whichever is earlier.

LOKPAL'S PERFORMANCE AND CHALLENGES

👁️ **Limited Investigations and Prosecutions**

o Since becoming operational in 2019, Lokpal has ordered investigations in only **24 cases** and granted prosecution sanction in **six cases**.

o This indicates a slow pace in tackling corruption complaints against public officials.

👁️ **Complaints Against PM and Other Officials**

o **Three complaints** were received against **Prime Minister Narendra Modi** in October and December 2023.

o Breakdown of complaints:

- **3%** against PM/MPs/Union Ministers.

- **21%** against Group A, B, C, and D officials.

- **35%** against Chairpersons/members of Central government bodies.

- **41%** against **State government officials** (under "Others" category).

👁️ **High Rejection Rate of Complaints**

o Nearly **90% of complaints were rejected** due to improper format.

o Only **2,320 defect-free complaints** were officially registered over five years.

👁️ **Time Restriction for Complaints**

o As per **Section 53 of the Lokpal and Lokayuktas Act, 2013**, complaints can only be entertained **if**

filed within seven years of the alleged offence.

👁️ **Delayed Appointments Affecting Efficiency**

o The **Lokpal Act was passed in 2013**, but the first Lokpal, **Justice Pinaki Chandra Ghosh**, was appointed **only in 2019**.

o After his retirement in May 2022, the post remained vacant for **nearly two years** until **Justice (retd) A.M. Khanwilkar** was appointed in **March 2024**.

👁️ **Staff Shortages and Pending Appointments**

o Lokpal is working to **recruit permanent staff**, replacing temporary employees.

o Key positions, including **Director of Inquiry and Director of Prosecution**, remain **vacant**.

o Due to this, Lokpal relies on **CVC (Central Vigilance Commission) and CBI (Central Bureau of Investigation)** for investigations.

👁️ **Structural and Legal Challenges**

o As per **Section 11A of the Central Vigilance Commission (CVC) Act, 2003**, a **Director of Inquiry** (not below the rank of Joint Secretary) must be appointed in the **CVC** for conducting preliminary inquiries for Lokpal.

o However, this post is **vacant**, and investigations are instead carried out by **Central Vigilance Officers (CVOs)** in concerned ministries or organisations.

WAY FORWARD

* **Accelerate Establishment of Key Wings**
  o The government should **prioritize filling vacancies** in the **Inquiry and Prosecution Wings**, including appointing the **Director of Inquiry and Director of Prosecution**, to ensure the effective functioning of Lokpal.

* **Define Coordination with Investigative Bodies**
  o A well-defined framework for **Lokpal's supervisory powers over the CBI** and its coordination with agencies like the **Enforcement Directorate (ED) and the Central Vigilance Commission (CVC)** should be established for seamless investigations.

* **Incorporate International Best Practices**
  o India should integrate **best practices from international whistleblower protection mechanisms**, particularly in line with the **United Nations Convention against Corruption (UNCAC)**, to encourage corruption reporting without fear of retaliation.

* **Act on Expert Committee Recommendations**
  o The government must actively **consider and implement recommendations** from expert panels such as the **Second Administrative Reforms Commission (ARC)** to improve **Lokpal's accountability, streamline processes, and enhance operational efficiency**.

* **Boost Institutional Effectiveness**
  o Lokpal should expedite the **framing of new regulations under Section 60** of the **Lokpal and Lokayuktas Act, 2013**, to enhance its functioning.
  o Strengthening collaboration with **CVC, CBI, and ED** will improve the **complaint-handling process** and ensure better coordination among anti-corruption agencies.

CONCLUSION

Strengthening Lokpal through **filling vacancies, enhancing coordination with agencies, adopting global best practices, and implementing expert recommendations** is essential for effective anti-corruption measures. As the **Lokpal celebrated its 11th Foundation Day** on **January 16, 2025**, it is an opportune moment to reinforce its role in promoting **transparency, accountability, and public trust** in governance.

SAMPLE QUESTION

Q) *Discuss the evolution, challenges, and the present status of the Lokpal and Lokayukta system in India. In light of its shortcomings, suggest reforms to enhance the effectiveness of these anti-corruption bodies.* **(15 marks) (250 words)**

POLAR VORTEX

> *Syllabus: GS I - Important geographic phenomena*

PYQ MAPPING

Q) *Bring out the causes for the formation of heat islands in the urban habitat of the world.* **(2013)**

Q) *Bring out the relationship between the shrinking Himalayan glaciers and the symptoms of climate change in the Indian sub-continent.* **(2014)**

Q) *How do the melting of Arctic ice and glaciers of the Antarctic differently affect the weather patterns and human activities on earth? Explain.* **(2021)**

Q) *The troposphere is a very significant atmospheric layer that determines weather processes. How ?* **(2022)**

INTRODUCTION

- A polar vortex is a large area of low pressure and cold air that is typically found near the Earth's poles. It is a circulating pattern of winds that traps cold air in the polar regions and keeps it there.
- The polar vortex is made up of strong westerly winds that forms around 16-48 km above Arctic and Antarctic region and flow in a counterclockwise direction
- It is an extensive **low-pressure system** filled with cold air.
- The term "vortex" refers to the counter-clockwise movement of air, which helps keep frigid temperatures concentrated near the polar regions.
- The **polar vortex** is stronger in the **Southern Hemisphere** during its winter due to larger ocean area (leads to stabler temperatures) and stronger jet stream.

WHY IN NEWS

The United States recently faced one of its most intense winter storms in over a decade, primarily due to the Antarctic polar vortex.

SHORT TAKES

➤ **Arctic Oscillation (AO):**
- o It is a climate pattern affecting winter weather in the Northern Hemisphere. When the Arctic Oscillation (AO) is positive, a strong jet stream directs storms north, limiting cold air outbreaks in the mid-latitudes, while the negative phase shifts the jet stream south, causing cold outbreaks and storms.
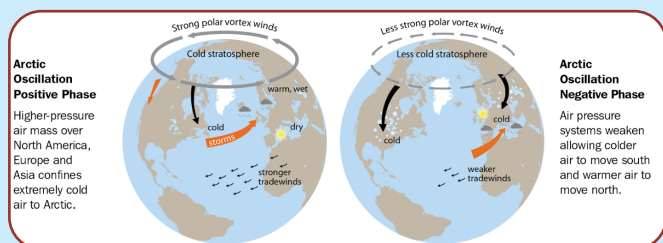
➤ **North Atlantic Oscillation (NAO):**
- o The NAO measures pressure differences between the Azores High and Subpolar Low, affecting weather patterns in North America and Europe.
- o The positive phase of NAO brings warmer, wetter conditions in the US and northern Europe, while the negative phase causes cooler, drier conditions.
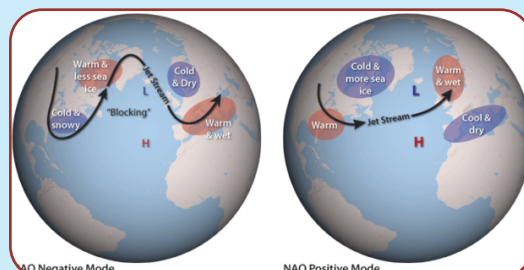
## TYPES OF POLAR VORTEX

◊ **Tropospheric Polar Vortex:**
- o Located in the lowest layer of the atmosphere (extending up to 10-15 km), where the majority of weather phenomena take place.

◊ **Stratospheric Polar Vortex:**
- o Found at higher altitudes (15-50 km), it is most intense during autumn and dissipates in the summer.

POLAR JET STREAM

♣ The **polar jet stream** is a **fast-moving air current** found in the **troposphere** (5–9 miles above the surface).

♣ It marks the **boundary between cold polar air and warm mid-latitude air** and plays a major role in **day-to-day weather changes** in the mid-latitudes.

♣ Unlike the **polar vortex**, which is high in the stratosphere, the **polar jet stream directly influences surface weather patterns**.
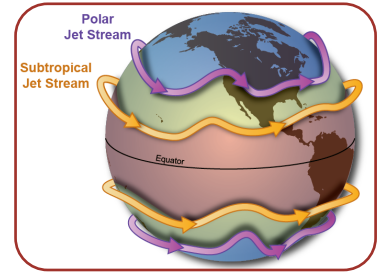

According to National Oceanic and Atmospheric Administration Stratosphere expert Amy Butler, *people often confuse the polar vortex with the polar jet stream, but the two are in completely separate layers of the atmosphere.*

• *The polar jet stream occurs in the troposphere, at altitudes between 5-9 miles above the surface. It marks the boundary between surface air masses, separating warmer, mid-latitude air and colder, polar air.*
• *It's the polar jet stream that plays such a big role in our day-to-day winter weather in the mid-latitudes, not the polar vortex.*

Source— UN-SPIDER (United Nations Platform for Space-based Information for Disaster Management and Emergency Response) Knowledge Portal

How Did It Cause The Recent US Winter Storm?

➢ The **polar vortex weakened**, allowing **Arctic air to move south**.

➢ **Subfreezing temperatures** hit even southern US states like **Texas, Oklahoma, and Florida**.

➢ **Severe snowfall, ice storms, and blizzards** impacted multiple states, leading to:

  o **School closures, flight cancellations, and road accidents** (over 650 crashes in Virginia alone).

  o **Power outages** affecting 200,000 people across Kentucky, Indiana, Virginia, and others.

  o **Boil-water advisory in Richmond, Virginia**, due to a storm-related power failure.
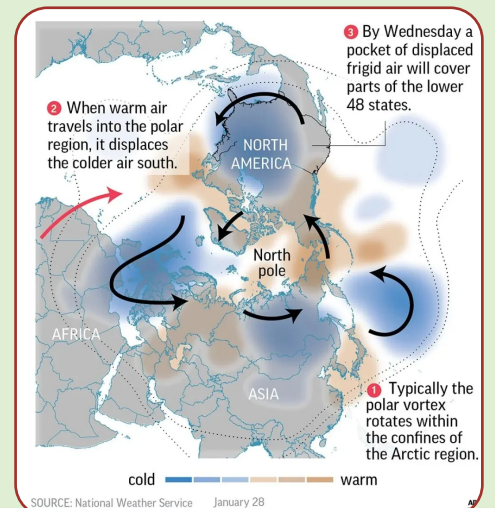
IMPACT OF POLAR VORTEX ON WINTER WEATHER

♣ The *Strong and Stable Polar Vortex (Less Impact on Mid-Latitudes)*

  o When the **polar vortex is strong**, it keeps the **jet stream stable** and **positioned farther north**.

  o This traps the **cold Arctic air** in the polar region, leading to **colder Arctic temperatures** but **milder winter weather in mid-latitudes**.

  o The **Arctic Oscillation (AO)** is often in a **positive phase**, indicating stable weather patterns.

♣ *Weak or Disrupted Polar Vortex (Extreme Cold in Mid-Latitudes)*

♣ Sometimes, the polar vortex is **disturbed by strong atmospheric waves** from the troposphere, causing:

  o The vortex to **weaken, wobble, shift, or even split into multiple parts**.

  o A **sudden stratospheric warming (SSW)**, where
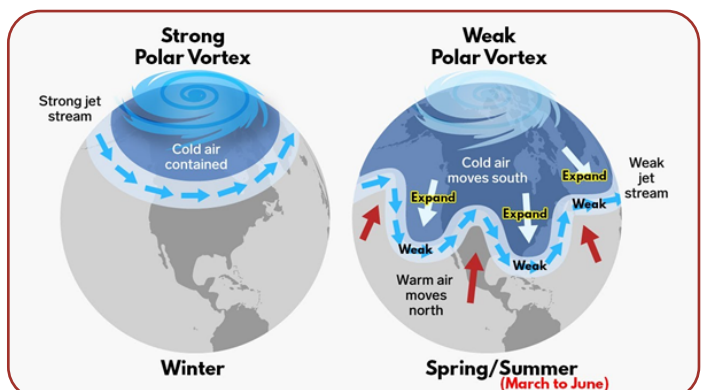
polar stratospheric temperatures rise rapidly.

♣ This **disrupts the polar jet stream**, making it **wavy and unstable**.

♣ As a result:

○ **Warm air flows into the Arctic**, leading to extreme ice melt.

○ **Cold polar air moves southward**, bringing **severe winter storms** and frigid temperatures to regions like the **United States and Europe**.

REASONS FOR POLAR VORTEX DESTABILIZATION

👁 **Sudden Stratospheric Warming (SSW)**

○ Sudden **Stratospheric Warming (SSW)** is the **most common trigger** for polar vortex destabilization.

  • Large-scale **atmospheric waves (Rossby waves) from the troposphere** move upward and **disrupt the polar vortex**.

  • This causes **a sudden temperature rise in the stratosphere (up to 50°C in a few days)**.

  • As a result, the **polar vortex weakens, shifts, or splits**.

👁 **Arctic Warming and Sea Ice Loss**

○ The Arctic is **warming at nearly four times the global average** (a phenomenon called **Arctic amplification**).

○ **Less sea ice in the Arctic leads to:**

  • **More heat escapes from the ocean into the atmosphere**, which **weakens the temperature gradient** between the poles and the mid-latitudes.

  • A weaker gradient can **slow the polar jet stream**, making it more **wavy and unstable**.

  • This can **increase wave activity in the atmosphere**, leading to **polar vortex disruptions**.

○ **Example:**

  • **Low sea ice in the Barents and Kara Seas** has been linked to **weaker polar vortex events** and **colder winters in Eurasia**.

👁 **Changes in the Jet Stream**

○ The **jet stream is closely linked** to the polar vortex.

○ A **strong and stable jet stream** keeps the vortex **locked in place**, while a **weaker or meandering jet stream** allows **cold Arctic air to escape southward**.

○ Factors influencing the jet stream:

  • **Warming Arctic temperatures** reduce the **temperature contrast** between the poles and mid-latitudes, which **slows down the jet stream**.

  • A slower jet stream **creates larger waves**, leading to **more extreme weather patterns**, including polar vortex disruptions.

👁 **Ozone Depletion**

○ **Ozone absorbs UV radiation**, warming the stratosphere.

○ **Reduced ozone levels** (due to human-made CFCs and natural variations) can **weaken the temperature gradient** and influence **polar vortex stability**.

○ Ozone depletion is **more significant in the Southern Hemisphere**, leading to a **stronger and more stable Antarctic polar vortex** compared to the Arctic.

👁 **Atmospheric Blocking Patterns**

○ **Blocking patterns (such as Greenland blocking or the Scandinavian High)** can disrupt the **polar jet stream**, making it more **wavy**.

○ This allows **cold air to spill southward**, reinforcing **polar vortex instability**.

○ **Example:**

  • The **2010 European cold wave** was linked to a strong **Greenland block** that disrupted the jet stream and weakened the polar vortex.

IMPLICATIONS

◆ **Extreme Cold Events:**

○ A disrupted or weakened polar vortex can send Arctic air southward, causing sudden cold spells in mid-latitude regions, including parts of North America, Europe, and Asia.

○ This can result in freezing temperatures, snowstorms, and severe winter weather conditions.

◆ **Weather Disruption:**

○ A weakened vortex can cause the jet stream to become more wavy and meandering, which leads to prolonged periods of unusual weather, such as extended cold spells or warm spells.

○ As the polar vortex weakens and cold air moves southward, areas not usually accustomed to heavy snow or extreme cold may experience

heavy snowstorms, leading to disruptions in transportation, agriculture, and infrastructure.

- **Impact on Agriculture:**
  - o Cold air outbreaks from a destabilized vortex can harm crops, particularly in areas where cold weather is not typical.
  - o Sudden freezes can damage delicate crops, affecting local and global food production.

- **Global Climate Impact:**
  - o Changes in the polar vortex can influence the Arctic Oscillation and other climate systems, which in turn can impact seasonal weather patterns, including the severity of winter and summer weather in different regions.
  - o Long-term disruptions in the vortex could be linked to shifts in global climate patterns, possibly amplifying regional climate extremes.

CONCLUSION

The polar vortex influences extreme winter weather by confining or releasing cold Arctic air. Its disruptions can lead to severe cold, snowstorms, and societal impacts. Strengthening monitoring, improving forecasts, and studying its link to climate change will be crucial for better adaptation and mitigation.

SAMPLE QUESTION

Q) Discuss the role of the polar vortex in shaping winter weather patterns, its implications on global climate. **(10 marks) (150 words)**

WEEKLY DOSSIERS

AI POWERED TRAFFIC MANAGEMENT: NIT ROURKELA'S DEEP LEARNING SOLUTION FOR MIXED TRAFFIC DETECTION

Traffic congestion is a major challenge in developing countries due to **mixed traffic conditions**, where various types of vehicles—cars, trucks, cycles, rickshaws, and even animal carts—share the road. Traditional **Intelligent Vehicle Detection (IVD)** systems using **radar and LiDAR sensors** struggle in such environments, especially under adverse weather conditions. To address these limitations, researchers at **NIT Rourkela** have developed an **AI-based Multi-Class Vehicle Detection (MCVD) model** and the **Light Fusion Bi-Directional Feature Pyramid Network (LFBFPN)** tool.

OBJECTIVE

The research aimed to develop an **efficient, real-time vehicle detection system** that overcomes the limitations of existing IVD models, particularly in **dense, heterogeneous traffic environments** of developing countries.

METHODOLOGY

- **Deep Learning Approach**: The research team used **Convolutional Neural Networks (CNNs)** to process and analyze traffic images.
- **Video Deinterlacing Network (VDnet)**: This component helps extract key features from images, even when vehicles vary in size and orientation.
- **LFBFPN Tool**: Simplifies model complexity while maintaining detection accuracy.
- **Modified Vehicle Detection Head (MVDH)**: Further refines vehicle classification, making detection more precise.

- **Dataset & Testing**:
  - The model was trained and tested on the **Heterogeneous Traffic Labelled Dataset (HTLD)**, which includes data from various Indian cities.
  - Real-time testing was conducted on **Nvidia Jetson TX2**, an edge computing device, demonstrating strong performance under **low-resolution and challenging weather conditions**.

FINDINGS AND IMPACT

- **Higher Accuracy**: The MCVD model outperformed traditional methods in detecting and classifying vehicles in mixed traffic.
- **Cost-Effective Solution**: Unlike expensive **radar and LiDAR-based systems**, this AI-based model is **scalable and practical for real-world deployment**.

- **Traffic Optimization**: The system provides **real-time traffic data**, helping in congestion management and future road planning.
- **Improved Road Safety**: Enhanced detection contributes to **better traffic control systems**, reducing accidents and ensuring smoother vehicle movement.

CONCLUSION

The **MCVD model and LFBFPN tool** developed by **NIT Rourkela** represent a **significant advancement in AI-driven traffic management** for developing countries. By addressing the unique challenges of **mixed traffic, adverse weather, and limited computational resources**, this system offers a **cost-effective, scalable, and efficient solution** to **reduce congestion, enhance road safety, and optimize urban traffic planning**.

SUSTAINABLE STRAWBERRY CULTIVATION: HOW NATURAL FARMING TRANSFORMED LAMBASINGI

Traditionally known for its cool climate and coffee plantations, Lambasingi's farmers have ventured into strawberry farming, leveraging the village's unique climatic conditions. The introduction of natural farming methods has played a pivotal role in this agricultural transformation.

NATURAL FARMING PRACTICES IMPLEMENTED

- **Chemical-Free Cultivation**: Farmers have eliminated synthetic fertilizers and pesticides, opting for organic alternatives to maintain soil fertility and pest control.

- **Use of Indigenous Microorganisms (IMOs)**: The application of IMOs has enhanced soil health, promoting beneficial microbial activity essential for plant growth.

- **Mulching**: Organic mulching materials are used to conserve soil moisture, regulate temperature, and suppress weed growth, creating an optimal environment for strawberry plants.

OUTCOMES

- **Improved Yield and Quality**: The adoption of natural farming has led to higher strawberry yields with superior taste and nutritional value, attracting consumers seeking organic produce.

- **Economic Benefits**: Farmers have experienced increased income due to higher market demand for organically grown strawberries, coupled with reduced input costs from eliminating chemical fertilizers and pesticides.

- **Environmental Impact**: The shift to natural farming has resulted in healthier soils, increased biodiversity, and reduced environmental pollution, contributing to sustainable agricultural practices in the region.

CHALLENGES

- **Knowledge and Training**: Transitioning to natural farming required farmers to acquire new knowledge and skills, necessitating training programs and continuous learning.

- **Market Access**: Establishing reliable market channels for organic strawberries posed initial challenges, requiring efforts in marketing and consumer education.

CONCLUSION

Lambasingi's experience demonstrates the potential of natural farming to transform agricultural practices, leading to economic, environmental, and social benefits. The success in strawberry cultivation serves as a model for other regions aiming to adopt sustainable farming methods and promote agri-tourism.

GENDER AND PERSONAL SAFETY SENSITISATION PROGRAMME BY NIMHANS

The National Institute of Mental Health and Neurosciences (NIMHANS) undertook a comprehensive gender and personal safety sensitisation programme in Bengaluru's government schools, targeting children from grades 6 to 10. Launched in May 2022 and funded by the Safe City Project under the Centre's Nirbhaya scheme, the programme was a collaborative effort with the Karnataka Department of School Education.

OBJECTIVES

- **Promote Personal Safety:** Educate students on physical and emotional safety.
- **Foster Gender Sensitisation:** Introduce concepts of gender, sexuality, roles, and healthy relationships.
- **Empower Educators:** Train teachers to provide a supportive school environment.
- **Create Educational Resources:** Develop materials for future use in schools and communities.

KEY FEATURES

- **Target Audience:** Over 24,925 students across 205 government schools in Bengaluru.
- **Modules:**
  - o **6th-7th Graders:** Focused on personal safety (physical and emotional).
  - o **8th-10th Graders:** Included themes of gender, relationships, and personal safety in broader contexts.
- **Teacher Training:** Sensitised over 350 teachers across 10 batches.
- **Manuals and Resources:**
  - o Based on field-tested manuals from the NIMHANS Community Child and Adolescent Mental Health Service Project (2017).
  - o Translated manuals into Kannada for wider accessibility.
  - o Created posters for Information, Education, and Communication (IEC) purposes in schools.

INNOVATIVE APPROACH

The programme introduced an 80-minute animated film, **"Nanna Surakshate Nanna Hakku" (My Safety is My Right)**, to make the concepts relatable and engaging.

- **Storyline:** Protagonist Anu learns about personal safety from Raju Anna and Priya Akka through interactive stories and games.
- **Utility:** The film can be used for independent viewing or as a discussion tool.
- **Accessibility:** Available publicly on the NIMHANS website.

OUTCOMES

- **Student Reach:** Sensitised nearly 25,000 children to critical aspects of personal safety and gender awareness.
- **Empowered Educators:** Equipped teachers with knowledge and tools to address safety concerns effectively.
- **Sustainable Impact:** Created resources for long-term use, ensuring continued education on the subject.

SIGNIFICANCE

This initiative showcases the potential of interdisciplinary collaboration and innovative tools in addressing critical issues like gender sensitisation and child safety. By integrating classroom learning with multimedia resources, NIMHANS has laid the groundwork for a replicable model that can be scaled across regions.

CONCLUSION

The NIMHANS programme demonstrates how focused interventions in schools can transform children's understanding of personal safety and gender awareness. By combining evidence-based methods with creative storytelling, this initiative sets a benchmark for child-centric safety campaigns in India.

ETHICS - CASE STUDY

Q) You are a newly appointed cybersecurity analyst at a government intelligence agency and discover documents indicating that the government is spying on opposition leaders with alleged Naxal ties. When you discuss the matter with your superior, you are told that although the spying is illegal, it is deemed necessary for national security. However, being an honest person, you find yourself in deep conflict, as you believe that the spying, apart from being illegal, could also be misused by the government to settle political scores with its opponents.

a. What are the options available to you in this situation?

b. Evaluate the merits and demerits of each options.

ETHICS - EXAMPLES

1. **Accountability/Transparency:** The Sampoorna Plus app, developed by KITE, enables parents in Kerala to track their children's attendance, academic performance, and exam results, enhancing communication with schools. Launched in 2024, the app is accessible to parents of 36.44 lakh students across 12,943 schools, providing a platform for active parental involvement in education.

2. **Ethics in Science and Technology:** Dermatologists from India and 13 other countries have objected to the naming of a novel drug-resistant fungus, Trichophyton indotineae, citing the inappropriate nature of linking it to India. They argue that the origin of the fungus is unclear, and naming it after a specific region causes misinformation, stigma, and racial prejudice.

3. **Social Responsibility:** Shekhar Mahajan founded "Sahyog Care for You" in 2002 to combat child labour, rescuing over 2,788 children through 148 missions, providing rehabilitation, medical care, and vocational training. The NGO empowers rescued children by equipping them with skills for financial independence, transforming their lives and offering hope for a dignified future.

4. **Empowerment:** Nandhini Sugumar and V. Saranya are among the first women in Tamil Nadu trained as drone pilots under the Namo Drone Didi scheme, empowering them to assist farmers with tasks like spraying fertilizers and pesticides. Despite challenges such as transportation and equipment costs, they are using drones to supplement their incomes.

5. **Gender Neutrality:** Dr. RLV Ramakrishnan's appointment as Assistant Professor in Bharatanatyam at Kerala Kalamandalam marks the institution's first implementation of a reservation policy and gender-neutral hiring process. His appointment symbolizes resilience against discrimination as he is the first male dance teacher at the institution.

6. **Innovation**: NKure Therapeutics, a Bengaluru-based start-up, is developing affordable off-the-shelf immunotherapy to combat cancer, aiming to reduce treatment costs from ₹1 crore to ₹10-15 lakhs. Their approach focuses on using healthy donor cells, which are genetically modified and cryopreserved, to offer a safer, cost-effective alternative to traditional CAR-T cell therapies.

7. **Public Service and Welfare**: The CISF has launched a voluntary stretching initiative at Kochi airport to improve passengers' comfort and health, especially for long-distance travelers. The programme includes six stretching exercises to prevent muscle stiffness, enhance circulation, and reduce fatigue, with plans to expand based on feedback.

8. **Public/Civil service values:** The Nirikhyana initiative, led by IAS officer Dibyajyoti Parida in Ganjam district in Odisha, offers free ultrasound scans to pregnant women in rural areas, improving access to essential health services and reducing maternal and neonatal mortality rates. The scheme uses a public-private partnership and a mobile app to enhance service delivery and early detection of high-risk pregnancies.

MODEL ESSAY

"Every man is guilty of all the good he did not do"

Introduction

- Quote by Voltaire
- Introduce the idea of ethical duty in individual and societal contexts- inaction in doing good is a moral failure that affects individuals and society.

Need for Doing Good Actions

- **Promotes Social Harmony:** Good actions foster trust, cooperation, and mutual respect, creating a more peaceful society. Eg:Mahatma Gandhi's non-violent resistance inspired unity among Indians

- **Addresses Inequality:** Acts of kindness and charity help bridge the gap between the privileged and the underprivileged.Eg: The United Nations' World Food Programme -critical food assistance -regions suffering from famine and poverty.

- **Inspires Collective Action:** One person's good deeds often inspire others to contribute, leading to larger societal change.Eg: Malala Yousafzai's advocacy for girls' education -inspired global efforts .

- **Builds Personal Fulfilment:** Helping others enhances mental well-being and provides a sense of purpose. Eg: Volunteering in disaster relief -satisfaction and emotional growth to volunteers

Consequences of Inaction

- **Moral Guilt and Regret**: Individuals may experience lasting remorse for not seizing opportunities to help or intervene positively.

- **Exacerbation of Problems**: Inaction allows issues like poverty, inequality, or environmental degradation to worsen.

- **Loss of Trust and Community Bonds**: Apathy or failure to act in times of need erodes social cohesion and mutual trust.

- **Missed Opportunities for Change**: Potential for progress or resolution is lost when individuals or groups fail to act.

- **Perpetuation of Injustice**: Silence or inaction enables oppression and discrimination to persist unchecked.

Philosophical and Sociological Perspectives

- Immanuel Kant's categorical imperative: duty to act morally irrespective of consequences.

- Émile Durkheim's view on collective responsibility in maintaining societal harmony.

Historical and Contemporary Examples

- **The Holocaust:** Widespread silence and inaction by many nations and individuals allowed Nazi atrocities to escalate.

- **French Revolution:** Inaction by the aristocracy in addressing the plight of the poor led to rebellion and upheaval.

- **Climate Change:** Governments and corporations delaying action on climate policies have exacerbated global warming.

- **Social Media Activism**: Many individuals engage in "slacktivism" instead of taking tangible actions to address social issues.

Conclusion

- End with a call to action: individual efforts, however small, contribute to collective good.

- Reflect on how a better world can emerge when everyone takes responsibility for doing good.

Sample Quotes

- It's not the load that breaks you down, it's the way you carry it. – Lou Holtz

- All oppression creates a state of war- Simone de Beauvior

- Humility is not thinking less of yourself, it's thinking of yourself less- C S Lewis

MAINS JOT DOWN

GS- I - ART & CULTURE

- The **Archaeological Survey of India (ASI) recently discovered ancient Buddhist artifacts**, including a Buddha head and inscribed relics, during excavations at **Odisha's Ratnagiri.**

- Historically linked to Buddhism since Emperor Ashoka's invasion of Kalinga, Ratnagiri was a major center of Buddhist learning, rivaling Nalanda, especially in Mahayana and Tantrayana (Vajrayana) traditions.

- Along with **Lalitagiri and Udayagiri,** it forms Odisha's **"Diamond Triangle"** of Buddhist heritage sites.

- **Kalaripayattu**, an ancient martial art from Kerala, has been included for demonstration at the 38th National Games in Uttarakhand but removed from the competition section.

- It dates back to the Sangam period and consists of two main styles: Vadakkan (Northern style) from the Malabar region and Thekken (Southern style) from the Travancore region.

- The term "Kalari" refers to the training ground, and "Payattu" means the fight or intense physical practice.

GS- III -DISASTER MANAGEMENT

- Kerala has introduced the **KaWaCHaM system,** designed for real-time disaster alerts.

- Developed by the Kerala State Disaster Management Authority (KSDMA) with support from the National Disaster Management Authority and the World Bank, it offers hazard assessment, alerts, and action planning.

- Key features include a network of sirens, VPN-connected emergency centers, decision support software, and a large data center.

- KaWaCHaM aims to provide updates on extreme weather events like heavy rain.

GS- I - IMPORTANT GEOGRAPHICAL PHENOMENA

- **Indonesia's Mount Ibu, located on Halmahera Island, has erupted 1,000 times this month.**

- As an active volcano, it is part of the Pacific Ring of Fire, a highly seismically active zone with frequent volcanic eruptions and earthquakes.

- Indonesia's volcanic activity is driven by its position at the convergence of the Pacific, Eurasian, and Australian tectonic plates.

- Other recent eruptions in Indonesia include **Mount Sinabung and Mount Merapi.**

GS- I - INDIAN HISTORY

- Recently, tributes were paid to the martyrs of the **Kuka Movement**, an early resistance against British rule in Punjab after 1849.

- It was a key phase of the Namdhari Movement, founded by Satguru Ram Singh in 1857 at **Bhaini Sahib**.

- The Namdharis, known as "Kukas" for their distinct recitation of Gurbani, were encouraged to boycott British goods.

- Ram Singh organized military training for young men, promoting civil disobedience and symbolic resistance through hand-spun white attire.

GS- II -INTERNATIONAL RELATIONS

- India and eight other Indo-Pacific nations are participating in the **La Perouse multilateral naval exercise, hosted by France in the Malacca, Sunda, and Lombok straits.**

- The drill includes Australia, Canada, the U.S., Indonesia, Malaysia, the U.K., and Singapore.

- It aims to enhance maritime situational awareness through cooperation in surveillance, interdiction, and air operations.

GS- II - *GOVERNMENT POLICIES AND INTERVENTION*

➡ The Prime Minister distributed over 65 lakh property cards under the **SVAMITVA Scheme**, which aims to boost rural economic growth by providing official property ownership records to households in village residential areas.

➡ Implemented by the **Ministry of Panchayati Raj as a Central Sector Scheme**, it leverages technology from the Survey of India.

➡ The scheme involves large-scale mapping of rural properties using drones, real-time progress tracking through the SVAMITVA Dashboard, and the establishment of Continuous Operating Reference Stations (CORS) for accurate land mapping.

GS- II -*JUDICIARY*

➡ The Supreme Court recently highlighted the **Doctrine of Merger,** which was explained in *Kunhayammed v. State of Kerala* **(2000).**

➡ This doctrine states that there cannot be multiple decrees or operative orders on the same subject at the same time.

➡ Once a superior court adjudicates a case—whether by setting aside, modifying, or confirming the lower court's ruling—the superior court's decision becomes final and binding, effectively merging the lower court's judgment into it.

GS- III -*SCIENCE & TECHNOLOGY*

➡ Indian scientists have developed a **neuromorphic device inspired by the human body's habituation process.**

➡ Similar to nociceptors that detect and adapt to pain, this device mimics how repeated exposure reduces pain sensitivity.

➡ It has potential applications in smarter wearable technology and enhanced human-machine interactions.

GS- I -*IMPORTANT PERSONALITIES IN NEWS*

➡ IIT Bombay is set to launch an online archival project dedicated to **Narayana Guru in May.**

  » A revered social reformer and spiritual leader from Kerala, he championed the idea of 'One Caste, One Religion, One God.'

  » Along with Padmanabhan Palpu, he founded the Sree Narayana Dharma Paripalana Yogam (SNDP) to uplift and educate the Ezhava community.

  » He led the Aruvipuram movement, advocating for equal temple entry rights, and supported the Vaikom Satyagraha (1924-25) in Travancore. His notable works include *Daiva Dasakam* and *Anukampadasakam*.

  » His legacy reflects values of equality, non-violence, compassion, integrity, and courage.

CHERRYPICKS OF THE WEEK

ENEMY PROPERTY

- It is governed by the **Enemy Property Act, 1968**, which defines an 'enemy' as a country (and its citizens) that has engaged in external aggression against India.
- The term refers to any property currently owned or managed on behalf of an enemy, enemy subject, or enemy firm.
- A 2017 amendment expanded the definition of 'enemy' to include the **legal heirs or successors of an enemy**, regardless of their citizenship, and individuals who have changed their nationality.

DARK OXYGEN

- Scientists found **"dark" oxygen** 13,100 feet deep in the Pacific's Clarion-Clipperton Zone.
- Metallic nodules on the seafloor, rich in manganese and iron, were observed splitting seawater (H_2O) to produce oxygen without sunlight.
- This challenges the idea that photosynthesis is the sole oxygen source, suggests oxygen-rich environments could exist on other planets, and reshapes our understanding of life's origins.

ELECTORAL TRUSTS

- Following the Supreme Court's annulment of electoral bonds last year, political donations through **electoral trusts** have surged.
- These trusts are governed by the **Electoral Trusts Scheme, 2013**, and **Rule 17CA of the Income-tax Rules, 1962**.
- Set up by companies, they facilitate donations from individuals and corporations to political parties.
- Unlike electoral bonds, electoral trusts ensure greater transparency by mandating annual disclosure of donor and recipient details to the Election Commission. Additionally, these trusts must renew their registration every three years.

ENTITY LOCKER

- The **National eGovernance Division**, under the **Ministry of Electronics and Information Technology**, has launched **Entity Locker**, a secure cloud-based solution designed to simplify document storage, sharing, and verification for organizations, corporations, and MSMEs.
- A key element of India's Digital Public Infrastructure, Entity Locker provides real-time access to documents integrated with government databases, consent-based sharing of sensitive information, and Aadhaar-authenticated, role-based access management.
- It offers 10 GB of encrypted cloud storage and legally valid digital signatures for document authentication.

KEELING CURVE

- It is a graph that tracks the concentration of CO_2 in the Earth's atmosphere over time, measured in parts per million (ppm).
- Continuous measurements began in 1958 at the Mauna Loa Observatory in Hawaii and were developed by **Charles David Keeling**.
- It is considered one of the most iconic indicators of global atmospheric change.