

GS PAPER-2- BILATERAL, REGIONAL AND GLOBAL GROUPINGS AND AGREEMENTS INVOLVING INDIA AND/OR AFFECTING INDIA'S INTERESTS**India's Potential Role in Russia-Ukraine Conflict Mediation**

Prime Minister Narendra Modi's recent diplomatic activities—including his visit to Kyiv, conversations with U.S. President Joe Biden and Russian President Vladimir Putin, and upcoming engagements at the UN meeting in September and the BRICS summit in Russia—have heightened expectations that India may play a more active role in mediating the Russia-Ukraine conflict.

What is India's Current Position on Russia-Ukraine conflict?

- 1) India has been distancing itself from what External Affairs Minister referred to as "Europe's war."
- 2) Non-involvement in peace processes that don't directly bring Russia and Ukraine to the negotiating table
- 3) Disassociation from the Swiss peace summit.

What are the Obstacles to the Peace Process?

- 1) **Competing Demands** -The situation is complicated by the firm positions of both sides: President Zelenskyy demands a complete Russian withdrawal from Ukraine, while President Putin requires Ukraine to pull back from occupied regions and drop its NATO membership bid.
- 2) **Persistent Power Struggles** -Both sides are focused on military gains, as shown by Russia's attacks on Ukraine before Modi's Moscow visit and Ukraine's operations in Kursk Oblast before his Kyiv visit. These actions highlight the ongoing power struggles and both sides' commitment to their goals despite diplomatic pressure.

What should be approach for India?

- 1) **Effective Conflict Mediation** -India should approach conflict resolution carefully if it wants to join global efforts. Effective mediation has been rare and often involves clear goals, like the Black Sea Grain Initiative and recent prisoner exchanges. India needs to define its own principles for a ceasefire and lasting peace.
- 2) **Learning from Historical Mediation Successes** -The government may find it useful to look at India's own history. In the 1950s, India Prime Minister mediated between Soviet leader Nikita Khrushchev and Austria for the withdrawal of troops in exchange for Austria's neutrality.
- 3) **Overcoming Perceptions of Partiality** -To effectively mediate the conflict, India should overcome perceptions of partiality towards Moscow.

GS PAPER-2- ISSUES RELATING TO DEVELOPMENT AND MANAGEMENT OF SOCIAL SECTOR/SERVICES RELATING TO HEALTH**Conflict Between Allopathy and Ayurveda in India**

The COVID-19 pandemic in 2020 triggered a conflict between allopathic and Ayurvedic medicine. Patanjali Ayurveda's quick release of Coronil as a COVID-19 cure faced backlash from allopathic doctors. In 2022, the Indian Medical Association (IMA) sued Patanjali and its founder for criticizing allopathy. The Supreme Court intervened, requiring Patanjali to issue a public apology.

What are the interventions made by the Supreme Court?

- 1) **Ban on Misleading Ads** -The Supreme Court blocked a July 2023 notification from the Ayush Ministry that sought to lift India's ban on misleading ads for Ayurvedic, Siddha, and Unani drugs, thereby reinforcing its commitment to protecting public health.
- 2) **Court Reaffirms Enforcement of Rule 170** -The Court ruled that Rule 170 of the Drugs and Cosmetic Rules, 1945, which prohibits misleading advertisements about the therapeutic claims of traditional medicines, must remain enforced.
- 3) **Reinstatement of Rule 170** -In August 2023, the Ayush Ministry told states and Union territories to ignore the ban on misleading ads. The Supreme Court ordered the ministry to retract this directive, but the ministry then issued a notice that omitted Rule 170. The Court then reinstated Rule 170 and requested an explanation from the ministry for its omission.

What is the difference between Allopathy and Ayurveda system of medicines?

- 1) Allopathic drugs are rigorously tested for safety and effectiveness through clinical trials, while Ayurvedic products are regulated less strictly, focusing mainly on safety and adherence to traditional texts.
- 2) Allopathic medicines are held to high standards due to rigorous clinical trials, which enhances their credibility but can also make other products seem more credible. On the other hand, Ayurvedic medicines are regulated less strictly. While Ayurvedic practitioners can conduct their own trials, many herbal remedies still lack solid scientific evidence.

Way ahead- India should support traditional medicine and ensure people have the freedom to choose. To prevent misleading health claims, traditional treatments should be tested and their results publicly available. Hence, a strict advertising code for Ayurveda is necessary.

GS PAPER2- POLITY**Democratic Backlash in South Asia**

The article discusses a "silent democratic backlash" in South Asia, comparing India and Pakistan. It explains how India, once a strong democracy, is now showing authoritarian tendencies, while in Pakistan, public protests challenge military influence in politics.

What is the Democratic Backlash in South Asia?

1. **Rise of Authoritarianism in India:** Since 2014, India's democratic structure has shifted towards authoritarianism, with the BJP promoting an "Opposition-free" democracy and centralizing power.
2. **Public Pushback in Pakistan:** In Pakistan, despite a history of military influence, recent elections and public protests indicate a growing rejection of military-political collusion.
3. **Middle-Class Sentiments:** Both India and Pakistan's middle classes have historically supported authoritarian governance, but younger generations are increasingly critical.
4. **Digital Advocacy:** Citizens in both countries are using digital platforms to demand democratic reforms and resist authoritarian tendencies.

How Has Democracy Evolved in India?

1. India was initially known for its strong democratic foundations, free elections, and separation of powers.
2. Except for the 1975 Emergency, India maintained civilian dominance over the military.
3. BJP's rise in 2014 marked a shift towards authoritarianism with increased executive overreach. The BJP's push for a "Congress-mukt Bharat" exemplified a move toward a one-party state.
4. Universities became centers of nationalist symbolism, curbing student protests.

What is Happening in Pakistan?

1. Pakistan has a history of military and bureaucratic control, leading to authoritarian rule.
2. Since 2008, Pakistan has held four general elections, indicating a shift towards democracy.
3. However, military influence remains strong, as seen in the 2018 and 2024 elections where political elites allied with the military to gain power.
4. Public protests, like the lawyers' movement, and mass dissatisfaction with military rule continue to challenge this authoritarianism.
5. Despite military influence, citizens increasingly advocate for democracy, as seen in the rise of the PTI in the 2024 election.

Way forward

Both countries have seen citizens use new methods, like digital spaces, to demand democratic governance. India's recent elections reflect a pushback against authoritarian politics, and in Pakistan, there's an ongoing tension between the military's influence and the public's democratic aspirations. The outcome of these movements will shape the future political landscape in both nations.

GS PAPER-3— INDIAN ECONOMY AND ISSUES RELATING TO PLANNING, MOBILIZATION OF RESOURCES, GROWTH, DEVELOPMENT AND EMPLOYMENT**India's Inflation Targeting Framework**

In September 2016, India set a 4% inflation target with a 2% to 6% range, reviewed every five years. The six-member Monetary Policy Committee (MPC), made up of three RBI members and three external experts, oversees this framework. The approach has successfully reduced inflation, minimized CPI volatility, and improved the effectiveness of monetary policy.

What are the arguments for modifying the approach to inflation targeting?**1) Broadening the mandate-**

A) Critics suggest that the RBI's mandate to ensure price stability and support economic growth needs to be broadened. Some propose giving the growth objective equal weight to price stability, similar to the US Federal Reserve's dual mandate.

B) Others recommend including additional responsibilities, such as fostering the corporate bond market and advancing green finance.

2) **Headline CPI** -Headline inflation is problematic because volatile food prices can skew policy decisions. They recommend that the RBI ignore fluctuations in food price inflation.

3) **Weight in the Inflation Basket**— The current inflation basket gives food and beverages a 45.8% weight, unchanged since 2011-12, despite a near doubling of per capita incomes. As incomes rise, the share spent on food decreases: Bangladesh spends 45%, Vietnam 33%, Brazil 24%, and South Korea 14%.

4) **Inflation Tolerance Band** -The RBI's $\pm 2\%$ tolerance band for inflation is broader than in many emerging markets. This wide band may weaken inflation control and increase expectation volatility.

What are the arguments against modifying the approach to inflation targeting?

1) **Risks of Overloading the Central Bank** -Assigning too many responsibilities to the central bank can distract from its primary role of maintaining price stability, complicate interest rate policy, destabilize inflation expectations, and reduce its accountability.

2) **Impact of Food-Price Inflation on Core Inflation**— Food-price inflation can affect core inflation as producers raise prices on other goods. The central bank shouldn't react to every food price change, but consistently ignoring deviations from the target can have negative effects.

3) **Suitability of India's 4% Inflation Target**– India's 4% inflation target is higher than in other emerging countries but fits its fast-growing economy. Raising it to 6% or 8% could harm investment confidence, raise inflation expectations, and damage the RBI's credibility.

4) **Challenges of a Narrower Inflation Tolerance Band** -Food prices are a major and volatile part of Indian inflation, so a narrower tolerance band isn't practical. During global economic uncertainty, such a band could cause frequent interest rate changes, making investments unpredictable and slowing growth.

What should be the way forward?

1) **Optimizing Food Weight** -Reducing the food weight in India's inflation basket to 40%, and potentially to 30% over the next decade as incomes increase, would improve alignment with the inflation target and address concerns about food price changes.

2) **Clear Inflation Target**– India should maintain a clear anchor such as an inflation target, which has a proven track record of success. Avoiding radical changes, like broadening the RBI's mandate or adopting a more discretionary approach, will help ensure stability and effectiveness.

GS PAPER3- CONSERVATION, ENVIRONMENTAL POLLUTION AND DEGRADATION, ENVIRONMENTAL IMPACT ASSESSMENT

Shift in India's Climate Policy

The article discusses India's transition from energy efficiency targets in polluting industries like iron and steel to emission targets. It explains the shift from the PAT scheme to a carbon market approach, aligning climate change efforts with socioeconomic priorities.

What is the Shift in India's Climate Policy?

1. The finance minister announced that industries with high pollution levels, such as iron, steel, and aluminium, will need to meet specific emission targets instead of just focusing on energy efficiency.
2. This means that instead of just using energy more efficiently, these industries must limit their overall pollution.
3. India aims to tackle climate change while also meeting its development needs, such as industrial growth and housing.
4. The move towards a carbon market approach is seen as a step to better manage and reduce overall emissions, especially from industries that contribute significantly to pollution.

How Do PAT and Emissions Trading Work?

1. **Perform, Achieve, and Trade (PAT):** PAT is a regulatory tool aimed at reducing specific energy consumption in energy-intensive industries. It focuses on enhancing cost-effectiveness through energy efficiency. Industries that surpass their energy-saving targets generate certificates which they can trade.
2. **Emissions Trading (Cap and Trade):** This system assigns absolute emission caps to polluters, encouraging them to stay within these limits. Unlike PAT, it deals with total emissions rather than energy efficiency. Companies must reduce their emissions to meet these caps or buy allowances from those who have excess credits, thus incentivizing reductions in overall emissions.

What Does the Carbon Market Mode Entail?

1. **Phased Implementation:** The carbon market in India will begin with a voluntary phase, supported by a domestic project-based offset scheme. Later, it will evolve into a compliance market with mandatory participation for regulated entities.
2. **Sector Inclusion:** From 2026, the carbon credits trading scheme will include high-polluting sectors like iron, steel, petrochemicals, chemicals, and aluminum.
3. **NDC Alignment:** This market aligns with India's Nationally Determined Contributions, aiming to reduce GDP emissions intensity by 45% and achieve 50% power capacity from non-fossil fuels by 2030.

How Does This Align With Global Efforts?

1. While India has not committed to specific emission cuts like those outlined in the European Union Emissions Trading System, it is working within its own development framework to find suitable ways to reduce emissions.
2. By transitioning to a carbon market, India adheres to its Nationally Determined Contributions under the 2015 Paris Agreement.
3. The approach balances India's development priorities with environmental sustainability, recognizing the unique challenges and needs of a developing economy.

PRELIM FACTS

1. Supreme Court's Stance on Bail in Money Laundering Cases

The Supreme Court of India recently reaffirmed the principle that "bail is the rule and jail is the exception," even in cases related to money laundering.

Key Observations by the Supreme Court

1. Liberty Over Incarceration: The court emphasized that individual liberty is the norm, and any deprivation of liberty should only occur through a valid and reasonable legal procedure.

2. Interpretation of Section 45 of PMLA: The court clarified that Section 45 of the Prevention of Money Laundering Act (PMLA) should not be interpreted in a manner that makes granting bail impossible. The section does not override the general principle that bail should be the default.

3. Conditions for Bail: The court noted that bail must be granted if the two conditions of Section 45 are satisfied:

- i) There are reasonable grounds to believe the accused is prima facie innocent.
- ii) The accused is unlikely to commit any crime while out on bail.

4. Court referred to the Manish Sisodia bail judgment (August 9, 2024) reinforcing that bail cannot be denied based on the whims of investigating agencies like the ED.

Right Against Self-Incrimination

1. Protection of Fundamental Rights: The Supreme Court ruled that the ED cannot force an accused in judicial custody to make a self-incriminatory statement in another money laundering case. This would violate the fundamental right to silence and protection against self-incrimination under Article 20(3) of the Constitution.

2. Section 50 of PMLA: Section 50 allows the Enforcement Directorate (ED) to summon individuals and request documents or statements. However, the court ruled that these powers cannot violate an individual’s right against self-incrimination.

3. Inadmissibility of Self-Incrimatory Statements: A person in custody cannot provide a statement with a “free mind”. This makes any self-incriminatory statement under ED pressure inadmissible as evidence. This ensures fairness and justice by preventing such statements from being used against the accused.

2. Leptospirosis

After the subsidence of Nipah Virus threat, Kerala is facing a new threat of Leptospirosis outbreak.

About Leptospirosis:

- Leptospirosis, also known as “rat fever”, is caused by a type of **bacteria** in the urine of animal carriers, particularly rats.
- **Causal Agent:** Caused by the **Leptospira bacteria**, which is primarily found in the urine of infected animals.
 - The carriers of the disease can be either wild or domestic animals, including **rodents, cattle, pigs, and dogs**.
- **Symptoms:** Range from fever, chills, headache to severe conditions affecting the **liver, kidneys, lungs, and brain**.
 - Some cases may have **no symptoms at all**.
- **Transmission:** The disease spreads through contact with the **urine of infected animals** or contaminated **soil and water**.
 - Individuals with **cuts or abrasions on their skin** are at increased risk.
- **Treatment:** It can be treated with **antibiotics**.

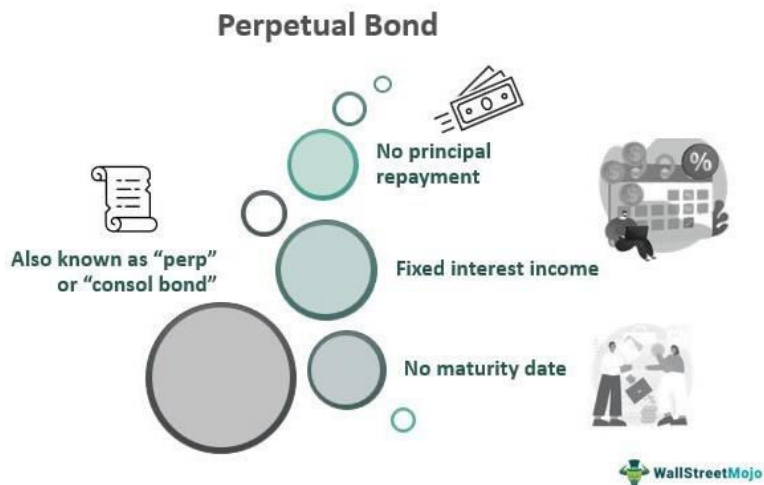
3. Perpetual bond

Canara Bank issued India’s first Additional Tier I perpetual bonds since recent rule changes, attracting strong investor interest with a lower-than-expected coupon of 8.27%.

- This marks a revival in demand for these bonds, which had declined due to regulatory challenges.
- The Securities and Exchange Board of India’s (SEBI) recent valuation tweak, allowing mutual funds to value these bonds based on the call option, has made them more attractive.

A perpetual bond is a type of debt security that does not have a fixed maturity date.

Unlike traditional bonds that have a set date when the principal amount is repaid, perpetual bonds continue to pay interest indefinitely.



4.Unified Lending Interface

RBI Governor announced that the Unified Lending Interface (ULI), designed for seamless and quick credit access, particularly for MSMEs and farmers, is currently in the pilot stage.

- The platform integrates diverse data sources to reduce loan appraisal times and simplify processes.
- It is expected to be launched nationwide soon, with the potential to transform the lending space, similar to how UPI revolutionized payments.

The Unified Lending Interface (ULI) is a proposed system aimed at standardizing and simplifying the lending process for both lenders and borrowers.

Technology: The implementation of ULI involves advanced technologies such as APIs (Application Programming Interfaces), data integration tools, and secure digital platforms.

5.Combination drugs

The Indian government has banned 156 fixed-dose combination (FDC) drugs, citing them as “irrational” with no therapeutic benefit.

- FDCs are combinations of two or more drugs in a single dose, often used to simplify treatment regimens.
- However, these combinations can lead to unnecessary drug use, contributing to issues like antibiotic resistance.

FIXED-DOSE COMBINATION

<ul style="list-style-type: none"> ■ Levocetirizine + Phenylephrine+ Paracetamol + Ambroxol – Relieves cold ■ Ofloxacin+ Ornidazole – Used for Infections ■ Glimepiride +Metformin+ Ploglitzazone – A combination diabetes medicine that helps control blood 	<ul style="list-style-type: none"> ■ sugar levels ■ Terbinafine+ Clobetasoal +Ofloxacin + Omidazole – Used to treat skin Infections ■ Aceclofenac + Paracetamol + Rabeprazol – A combination of three drugs used to relieve pain and inflammation
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6.Hollongapar Gibbon Wildlife Sanctuary

The Assam wildlife department has recommended **granting forest clearance** for Cairn Oil & Gas in the **eco-sensitive zone of Hollongapar Gibbon wildlife sanctuary**.

About the Hollongapar Gibbon Wildlife Sanctuary:

- **Location:** Assam, India.
- **Establishment:** Officially **established in 1997**, though the area was originally designated in 1881.
- **Flora:** Dominated by **hollong trees** in the upper canopy, **nahar trees** in the middle, and **evergreen shrubs and herbs** in the lower layers.
- **Fauna:** Home to India’s only ape species, the **hoolock gibbons**, and the **Bengal slow loris**, the region’s only nocturnal primate.

About Gibbons:

- **Gibbon** are species of **small apes** found in the **tropical forests of Southeast Asia**.
- **Species in India:** India has two species: the **eastern hoolock gibbon** (*Hoolock leuconedys*) and the **western hoolock gibbon** (*Hoolock hoolock*).
- **Threats:** All gibbon species, including hoolock gibbons, face **high extinction risks** due to deforestation and habitat loss caused by infrastructure projects.
- **Conservation Status:**
 - Both species are listed on **Schedule 1 of the Indian (Wildlife) Protection Act 1972**.
 - **IUCN Red List**
 - **Western Hoolock Gibbon:** Endangered
 - **Eastern Hoolock Gibbon:** Vulnerable

7.Guru Padmasambhava

Recently, **International Buddhist Confederation** organized a two-day International Conference on the ‘**Life and Living Legacy of Guru Padmasambhava Conference**’ at Nalanda, Bihar.

About Guru Padmasambhava (Guru Rinpoche):

- **Guru Padmasambhav:** He was a revered figure from the eighth century in ancient India, often regarded as the **second Buddha**.
- **Significance:** He is credited with **spreading Buddha Dhamma** across the **Himalayan region** and is a **pivotal figure in Tibetan Buddhism**, especially within the **Nyingma school**.

- **Meaning of his Name:** His name means “**Lotus-Born,**” reflecting his legendary birth from a lotus flower in a lake in Oddiyana.
- **Vajrayana Buddhism:** He taught Vajrayana Buddhism, emphasizing esoteric practices such as **mantras, mudras, and visualizations** as paths to enlightenment.

8. Agriculture Infrastructure Fund

The Union Cabinet approved the **expansion in the Central Sector Scheme** of financing facilities under ‘**Agriculture Infrastructure Fund**’.

About Agriculture Infrastructure Fund (AIF):

- AIF is a **financing facility** launched in **July 2020**.
- It aims to provide all-around financial support to the farmers, agri-entrepreneurs, farmer groups like FPOs, SHGs etc. to create **post-harvest management infrastructure**.
- It provides support of **3% interest subvention**,
- **Credit guarantee support** through Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme for loan of up to **Rs. 2 crore**.
- **Duration of AIF: 7 years** which also includes a **moratorium period of up to 2 years**

Initiatives to Expand the Scope of AIF:

- **Viable Farming Assets:** Expands eligibility for projects aimed at building **community farming assets**.
- **Integrated Processing Projects:** Includes integrated **primary & secondary processing projects** under AIF.
 - Standalone secondary projects are covered by **MoFPI schemes**.
- **PM KUSUM Component-A:** Converges with AIF to support **sustainable clean energy** and agricultural infrastructure for farmers and local bodies.
- **NABSanrakshan:** Extends **AIF credit guarantee** coverage for FPOs through NABSanrakshan Trustee Company Pvt. Ltd., to **boost financial security and investment**.

ANSWER WRITING

Q. In light of climate change-induced unpredictability, India’s weather forecasting capabilities require significant upgrades. Discuss the recent improvements in India’s meteorological services, the challenges that persist, and the potential impact of enhanced weather forecasting on the country’s disaster management and economic planning.

India’s weather forecasting, primarily managed by the **India Meteorological Department (IMD)**, is crucial for predicting monsoons, cyclones, and extreme weather events. With over **23 Doppler Weather Radars** and a network of **700+ Automatic Weather Stations**, IMD has enhanced its capabilities. However, climate change-induced unpredictability necessitates further upgrades in precision forecasting and real-time data analytics.

Need for Upgrading India’s Weather Forecasting Capabilities:

- **Increasing Climate Variability:** The rise in climate change-induced weather anomalies requires more precise forecasting tools to predict extreme events such as cyclones, floods, and heatwaves.
For example: During the **2019 Odisha cyclone (Fani)**, early warnings by IMD helped in evacuating 1.2 million people, but prediction of its intensity required advanced models.
- **Hyper-Local Weather Events:** There is a need for hyper-local weather forecasts to predict events like urban flooding and heat islands, which are currently difficult with existing broad-based models.
For example: In **Mumbai’s 2017 floods**, lack of hyper-local data resulted in delayed response and significant economic loss, highlighting the need for more granular weather predictions.
- **Increased Agricultural Dependence:** Agriculture, employing 58% of India’s population, heavily relies on accurate weather forecasts for timely sowing, irrigation, and harvesting.
For example: Precise rainfall prediction is critical for the **Kharif crop season**, especially in states like Punjab and Haryana, where water resources are limited.
- **Disaster Preparedness:** Improved forecasting is vital for better disaster management, minimising the impact on human lives and infrastructure.
For example: The **Kerala floods in 2018** exposed the need for more accurate rainfall forecasts and flood warnings to prevent widespread devastation.
- **Evolving Urban Landscapes:** Rapid urbanisation increases the complexity of weather patterns in cities, necessitating advanced technology for real-time updates and accurate forecasts.

Recent Improvements in India’s Meteorological Services:

- **Introduction of Advanced Weather Models:** IMD has adopted the **Global Forecast System (GFS)** and **Unified Model (UM)** for better long-range forecasts, improving accuracy by 20-40%.
For example: These models provided more accurate predictions for **Cyclone Amphan in 2020**, allowing better preparedness and response.

- **Expansion of Doppler Radar Network:** The installation of new **Doppler Weather Radars** in critical locations has enhanced IMD's capacity to monitor real-time weather conditions.
For example: The addition of radars in the **Northeast region** has significantly improved storm and flood forecasts, reducing risks to vulnerable communities.
- **Development of Nowcasting Systems:** IMD's **Nowcast** services offer real-time weather updates with a lead time of 3-6 hours, crucial for aviation, agriculture, and disaster management.
- **Integration of Satellite Data:** Using data from Indian satellites like **INSAT-3DR** and **SCATSAT-1**, IMD has improved its ability to monitor weather systems over the ocean and inland.
For example: These satellites played a critical role in monitoring the **2021 Tauktae cyclone** in the Arabian Sea, enhancing early warning systems.
- **Use of High-Performance Computing:** Upgrading computational infrastructure with **Mihir** and **Pratyush supercomputers** has enabled more sophisticated weather simulations and faster data processing.
For example: These systems have reduced prediction errors for rainfall by about 10% over the past five years, aiding in better water resource management.

Challenges Persisting in India's Weather Forecasting:

- **Inadequate Coverage in Remote Areas:** Many regions, especially in the Northeast and Himalayan belt, lack adequate weather monitoring infrastructure.
For instance: The **Arunachal Pradesh region** still faces challenges in receiving timely and accurate weather updates due to sparse meteorological stations.
- **Insufficient Real-Time Data Sharing:** There is a need for better integration and real-time sharing of data across various agencies and platforms.
For instance: The **lack of data integration** between IMD and local bodies during the 2015 Chennai floods resulted in greater damage.
- **Limited Public Awareness and Utilisation:** Despite advancements, public awareness about accessing and using weather forecasts remains low, particularly in rural areas.
For example: Farmers in **Bihar** often rely on **traditional knowledge** rather than updated weather forecasts, affecting agricultural productivity and disaster readiness.
- **Technical and Technological Gaps:** Current systems face technological limitations in predicting rapidly changing weather phenomena like tornadoes and cloudbursts.
For example: The **Uttarakhand cloudburst in 2013** underscored the need for **enhanced predictive models** capable of forecasting sudden and extreme weather events.
- **Resource Constraints:** Continuous updates to forecasting models and infrastructure require substantial investment and skilled manpower, which are currently limited.

Potential Impact of Enhanced Weather Forecasting:

- **Improved Disaster Management:** Enhanced forecasting capabilities can lead to timely evacuations and resource mobilisation, reducing fatalities and damage.
For example: Accurate cyclone forecasts in **Odisha** have historically led to fewer casualties due to timely evacuations and well-planned responses.
- **Optimised Agricultural Planning:** Reliable weather predictions can help farmers plan better, reducing crop losses and enhancing yield.
- **Economic Stability and Growth:** Minimising disruptions caused by weather events can stabilise markets, reduce insurance claims, and sustain economic activities.
- **Enhanced Water Resource Management:** Improved forecasting can aid in efficient water storage and distribution, crucial for irrigation and urban water supply.
For example: Forecasting tools enabled better management of water resources in the **Krishna Basin**, aiding in irrigation planning and drought mitigation.
- **Strengthened Infrastructure Resilience:** Proactive weather forecasts can guide infrastructure development to withstand extreme weather, reducing repair costs and enhancing durability.
For example: **Mumbai's Coastal Road Project** incorporated climate-resilient features based on weather data predictions, aiming to withstand future storm surges.

Enhancing India's weather forecasting capabilities is vital to address the growing challenges posed by climate change. Future efforts must focus on upgrading technology, expanding infrastructure, and integrating data systems. By doing so, India can improve disaster preparedness, economic resilience, and sustainable development, ensuring a safer and more prosperous future for its population amidst a changing climate.

MCQ

1. Consider the following statements about Guru Padmasambhava:
 1. He is considered the founder of Nyingma, the oldest tradition of Tibetan Buddhism.
 2. He is often regarded as the "Second Buddha".
 Which of the statements given above is/are correct?
 - a) 1 only
 - b) 2 only
 - c) **Both 1 and 2**
 - d) Neither 1 nor 2
2. Consider the following statements about Agriculture Infrastructure Fund (AIF):
 1. Agriculture Infrastructure Fund is a short term debt financing facility for investment in viable projects for post-harvest management infrastructure.
 2. It is a Central Sponsored Scheme with 50:50 shares between the State and the Central Government.
 3. The loans up to the limit of Rs. 2 crores provided under this financing facility includes interest subvention of 3% per annum.
 Which of the statements given above is/are correct?
 - a) 1 and 2 only
 - b) **3 only**
 - c) 2 and 3 only
 - d) 1, 2 and 3
3. Consider the following Species:
 1. Hoolock gibbon
 2. Bengal slow loris
 3. Indian elephants
 4. Nilgiri Tahr
 How many of the above species are found in Hollongapar Gibbon Sanctuary?
 - a) Only one
 - b) Only two
 - c) **Only three**
 - d) All four
4. Which of the following statements is true regarding the vegetation in the Hollongapar Gibbon Sanctuary?
 - a) The upper canopy is primarily composed of nahar trees.
 - b) The middle canopy is dominated by hollong trees.
 - c) **The sanctuary's vegetation includes a variety of evergreen shrubs and herbs in the lower canopy.**
 - d) The sanctuary is characterized by sparse vegetation, with a predominance of grasses.
5. Which of the following statements accurately describes Leptospirosis?
 - a) Leptospirosis is a viral disease transmitted primarily through airborne droplets.
 - b) **Leptospirosis is a zoonotic bacterial disease transmitted to humans through contaminated water, especially during the monsoons.**
 - c) Leptospirosis spreads easily through human-to-human contact.
 - d) Leptospirosis is a fungal infection commonly found in arid regions.
6. Consider the following:
 1. Cold storage and refrigerated transportation
 2. Primary processing units for cereals and pulses
 3. Solar panels for agricultural pumps
 4. Logistics facilities including sorting and packaging units
 How many of the above are covered under the Agricultural Infrastructure Fund (AIF)?
 - a) Only one
 - b) Only two
 - c) **Only three**
 - d) All four
7. Consider the following statements:
 1. Perform, Achieve, and Trade (PAT) sets absolute limits on emissions, while Emissions Trading (Cap and Trade) focuses on energy efficiency.
 2. India has aimed to cut greenhouse gas emissions by 43% by 2030 compared to 1990 levels.
 Which of the statement(s) given above is/are correct?
 - a) 1 only
 - b) 2 only
 - c) Both 1 and 2
 - d) **Neither 1 nor 2**
8. Which of the following statements is true regarding the procedure for renaming districts in India?
 - a) Renaming districts requires a constitutional amendment.
 - b) **The renaming process requires clearance from the Central Government after a proposal is submitted by the state.**
 - c) State governments can rename districts without any involvement from the Central Government.
 - d) The Supreme Court of India must approve the renaming of districts.
9. Which of the following preventive measures is recommended to reduce the risk of leptospirosis?
 - a) **Filling holes in walls to prevent rats from entering homes**
 - b) Wearing masks to prevent inhalation of bacteria
 - c) Frequent use of hand sanitizers
 - d) Consuming probiotics regularly
10. Consider the following statements Unified Payments Interface (UPI):
 1. It was launched by the National Payments Corporation of India (NPCI) in 2016.
 2. It requires all the customers to register with NPCI.
 3. For normal UPI the transaction limit is up to Rs 2 Lakh per transaction.
 Which of the statements given above is/are correct?
 - a) 1 only
 - b) **1 and 2 only**
 - c) 2 and 3 only
 - d) 3 only