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JULY-WEEK-III 19-25 JULY 2024

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SC Verdict in Citizenship Case

Syllabus: GS II- Government policies and interventions

Why in the News?

Recently, the Supreme Court (SC) restored citizenship of a man in Assam, 12 years after a tribunal in Assam declared him to be a foreigner. The apex court ruled that a "grave miscarriage of justice" had taken place in the *Abdur Rahim vs State of Assam and Ors* case.

Key Highlight of the Judgement

- Burden of Proof: Section 9 of the Foreigners Act, 1946, places the burden of proof on the person accused of being a foreigner.
 - However, the SC questioned whether Section 9 allows the authorities to randomly suspect someone without evidence.
- **State's Duty:** The apex Court clarified that while the burden of proof under the act is on the accused, the state must first provide evidence for the allegations.
- Discrepancy in spellings: The Court stated that minor variations in name spelling should not lead to dire consequences, as such errors are common

in electoral rolls.

- Preceding Verdicts: Citing the SC's verdict in the *Mukesh Singh vs State* (2020), the court stated that even in cases of a reverse burden of proof, the initial burden on the prosecution, must be satisfied.
 - As per the judgment in *Noor Aga vs State of Punjab (2008)*, the prosecution must prove basic facts even in cases of reverse burden of proof and the more serious the offense, the stricter the degree of proof.

Implication of the Supreme Court's Judgment

- The judgment will alleviate the anxieties of many people who, following the enactment of the Citizenship (Amendment) Act, 2019, Citizenship (Amendment) Rules, 2024 and the proposal to have a nationwide National Register of Citizens (NRC), are worried that minor spelling mistakes in there and their parents' names might affect their citizenship.
- It will also set a legal precedent for similar cases which are pending in the FTs.
 - Until March 2019, as many as 1.17 lakh people had been declared foreigners.

Citizenship (Amendment) Rules, 2024

- The Centre recently notified Rules for the Citizenship Amendment Act (CAA), paving the way for the implementation of the act more than four years after it was passed by Parliament in December 2019.
- The rules will also amend the Citizenship Rules, 2009.
- The rule will benefit Hindu, Sikh, Buddhist, Jain, Parsi, or Christian migrants from Pakistan, Bangladesh, and Afghanistan who entered India before December 31, 2014, and seek citizenship of India.
- Eligibility Criteria: To apply for citizenship by registration/naturalization one must be:

- Individual of Indian origin
- Individual married to an Indian citizen
- A minor child of an Indian citizen
- An Individual whose parents are registered as an Indian citizen
- An Individuals who or either of his parents was a citizen of Independent India
- An individual registered as an Overseas Citizen of India Cardholder
- For Citizenship by Naturalization: The applicant
 - Have to present an affidavit verifying the correctness of the statements made in the application and an affidavit by an Indian citizen to testify the character of the applicant.

- Have adequate knowledge of one of the languages of the 8th Schedule of Indian Constitution
- Renunciation Declaration: There should be a declaration by the applicant renouncing their citizenship of their current country, irrevocably and without future claim.
- Submission of Application:
 Applications are to be submitted electronically by the applicant to the Empowered Committee (EC) through the District Level Committee designated by the Central Government.

What is the Citizenship (Amendment) Act, 2019?

- Under the Citizenship (Amendment) Act, 2019 (CAA), migrants who entered India by December 31, 2014, and had suffered "religious persecution or fear of religious persecution" in their country of origin, were made eligible for citizenship by the new law.
- These people will be **granted fast track**

Indian citizenship in six years.

- The amendment also relaxed the residence requirement for naturalization of these migrants from eleven years to five.
- EC scrutinizes the application and grants citizenship upon fulfilling the criteria.

What is the National Register of Citizens (NRC)?

- NRC is a register containing names of all genuine Indian citizens. At present, only Assam has such a register.
- The NRC in Assam was introduced to identify foreign nationals in the state that borders Bangladesh.
- The process to update the register began following a Supreme Court order in 2013, with the state's nearly 33 million people having to prove that they were Indian nationals prior to March 24, 1971.
- The updated final NRC was released on August 31, with over 1.9 million applicants failing to make it to the list.

About Foreigners' Tribunals (FTs)

- They are quasi-judicial bodies, established under the Foreigners Act of 1946 as per the Foreigners' Tribunal Order, 1964.
 - The Foreigners Act, 1946 is a colonial legislation, which was meant to deal with foreigners.
- It empowers local authorities in a State to refer a person suspected to be a foreigner to tribunals.
- The FTs are currently exclusive to Assam as cases of "illegal immigrants" are dealt with according to the Foreigners' Act in other States.
- Each FT is headed by a member drawn

from judges, advocates, and civil servants with judicial experience.

- FT has the powers of a civil court in certain matters such as summoning and enforcing the attendance of any person and examining him or her on oath and requiring the production of any document.
- Appeals against the FTs order can be filed in the High Court and subsequent appeal can be made in the Supreme Court.
- The power to establish FTs in states was previously solely available to the Center, however, after the 2019 amendment to the Foreigners (Tribunals) Order, 1964, states now have the same authority.

Q. The Supreme Court recently passed a verdict restoring citizenship of a man in Assam after being declared a foreigner by a tribunal. In this context discuss the significance of this judgment in the light of the Citizenship (Amendment) Rules, 2024. **(250 words/15 marks)**

Semiconductor Industry in Assam**

Syllabus: GS V - Industries in Assam

Why in the News?

The Assam Government signed an agreement with the Tata Group to lease over 170 acres of land to the company at Jagiroad in Morigaon district for a Rs 27,000-crore indigenous "Semiconductor Assembly & Test Facility".

About Semiconductor

- A semiconductor material has an electrical conductivity value falling between that of conductor and an insulator.
- Their **resistance decreases** as their **temperature increases**, which is **behavior opposite** to that of a **metal**.
- They can be **made of pure elements** like silicon or germanium or compounds like gallium arsenide or cadmium selenide.

Potential for Growth of Semiconductor Industry in Assam

- Strategic Location: Assam's location in Northeast India and India's act east policy positions Assam as a potential hub for accessing Southeast Asia markets.
- Educational Institutions: Institutions like IIT Guwahati, Assam Engineering college can provide a skilled workforce and foster research and development in semiconductor technology.
- **Government Initiatives**: Support from policies and initiatives like 'UNNATI (Uttar Poorva Transformative Industrialization Scheme)' and 'Assam Electronics Policy' can further attract investments.
- **Availability of Resources:** The region's high-quality water resources along with a pollution-free environment is suitable for semiconductor operations.
- Burgeoning Industrial Infrastructure:

Assam Electronics (Semiconductor, etc.) Policy, 2023

- It acknowledges the potential of the semiconductor industry in reshaping Assam's industrial landscape and positioning the state as a key contender in semiconductor manufacturing.
- Some of the specific eligibility criteria

- Assam's growing industrial infrastructure, supported by Special Economic Zones (SEZs), is paving the way for significant economic development and investment opportunities in the region.
- Improving Connectivity: Through various infrastructure projects like Indo-Bangla maitri bridge, agartala-akhaura rail link, Indo-Bangladesh protocol waterway and airways networks are ideal for developing the industry.

Significance of Developing Semiconductor Industry in Assam

- Enhanced Industrial Landscape: The rise of the semiconductor industry will significantly boost Assam's industrial infrastructure, attracting further investments and technological advancements.
- **Economic Growth**: The establishment of semiconductor facilities will create jobs, stimulate local economies, and increase state revenue, providing impetus to national vision of vikashit Bharat.
- Collaboration and Partnerships: Opportunities for collaboration between local institutions and global tech companies will be fostered, driving innovation and knowledge exchange.
- Skill Development: Focused educational and training programs will emerge, equipping the local workforce with specialized skills in semiconductor technology.
- **Technological Advancement**: Investment in semiconductor manufacturing and R&D will place Assam at the forefront of technological progress, contributing to India's vision of Atmanirbhar Bharat in critical tech sectors.
- **Regional Progress**: The industry will act as a catalyst for overall regional development, improving infrastructure and connectivity, and enhancing the quality of life for residents.

outlined for semiconductor-related ventures, include:

- Compound Semiconductors,
- Silicon Photonics Sensors Fab,
- Semiconductor Assembly, Testing, Marking, and Packaging (ATMP) facilities

Economy

- Outsourced Semiconductor Assembly and Test (OSAT)
- The state government will provide additional financial support equal to 40% of the capital expenditure (Capex) assistance already being given by the Government of India.
- There are also customized incentives for large investments that can be tapped under Industrial and investment policy of Assam 2019.

Aims of Assam Electronics (Semiconductor, etc) Policy 2023:

 The policy seeks to establish Assam as a vibrant and self-reliant hub for semiconductor

Challenges in Developing Semiconductor Industry in Assam

- Impact on Agriculture: Semiconductor manufacturing is a water-intensive process, which could strain water resources and negatively impact agriculture, a vital sector in Assam.
- Skilled Labor Shortage: Assam currently lacks a skilled labor force specialized in semiconductor technology, raising concerns about the industry's ability to generate substantial employment opportunities in the region.
- Lack of Base Industries: The absence of other supporting industries, such as advanced electronics manufacturing and chemical processing plants, poses a significant hurdle to establishing a comprehensive semiconductor ecosystem.
- Infrastructure Development: Significant improvements in infrastructure, including reliable power supply, transportation, and connectivity, are necessary to support the semiconductor industry.
- High Initial Costs: Attracting investment for setting up semiconductor facilities involves overcoming high initial costs and the need for advanced technology.
- Environmental Concerns: Managing the environmental impact, including waste disposal and pollution control, is crucial for sustainable development of the semiconductor industry.

Recommendation for the Semiconductor Industry in

Comprehensive Skill Development:

- Implementing a well-coordinated action plan involving various stakeholders to upskill the local youth, making them suitable for semiconductor industry jobs.
- Encouraging industry-academia collaborations to introduce relevant skill development courses.

Employment Generation:

- Addressing concerns regarding the low employment potential of capital-intensive industries by promoting labour-intensive medium-scale manufacturing enterprises.
- Developing policy of employment that mandates a specific percentage of jobs for local skilled youth in semiconductor facilities.

Water Management:

manufacturing and electronics production.

- It aims to provide reversal of brain drain, export growth and revenue generation for the state of Assam.
- It also targets Semiconductor Fabrication and Design Investment.
- To increase job opportunities in the global market.
- It aims for ecosystem development and market resilience.
 - Developing a water conservation plan prioritizing recycling, reuse, and diversification to avoid water scarcity.
- Learn from international examples like Taiwan and Arizona to manage water resources effectively without harming agriculture.

Environmental Sustainability:

 Address industrial waste disposal issues by adopting modern, innovative measures.

Government and Policy Support:

- Formulate state-specific policies aligned with national semiconductor strategies to facilitate ease of doing business.
- Provide incentives and subsidies to attract both domestic and international investments in the semiconductor sector.

Infrastructure Development:

- Improve power supply, transportation, and internet connectivity to support the semiconductor industry.
- Invest in building robust infrastructure to facilitate the growth of the semiconductor ecosystem.

Encouraging Startups and Subsidiaries:

- Promote the growth of subsidiary and downstream activities to create a supportive ecosystem.
- Foster the birth of viable startups through collaboration with corporate firms and local skill training institutes.

As Ratan Tata aptly stated, the new semiconductor manufacturing facility will place Assam on the global map. However, achieving this requires a multifaceted approach to address emerging challenges. By effectively managing skill development, employment generation, water and environmental concerns. Assam can build a sustainable and thriving semiconductor industry that significantly contributes to the state's economic growth and technological advancement.

Q. Discuss the potential for growth and significance of developing the semiconductor industry in Assam. (150 words/10 marks)

Implementing AI in healthcare

Syllabus: GS III - Achievements of Indians in Science & Technology

Why in the News?

Artificial Intelligence (AI) has the potential to improve the access to healthcare for millions of people in India as India has a large population but faces a shortage of qualified healthcare professionals.

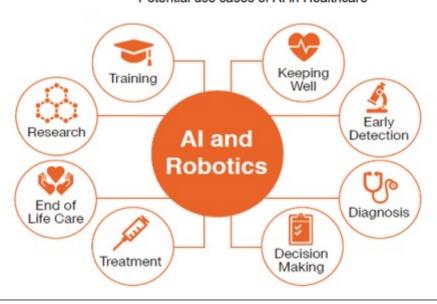
What Is AI in Healthcare?

AI in healthcare refers to the use of machine learning, natural language processing, deep learning
and other AI technologies to enhance the experiences of both healthcare professionals and
patients.

Significance of AI in Healthcare

- NITI Aayog highlighted in a report that India faces a shortage of qualified healthcare professionals
 - For instance, India has 0.76 doctors and 1.96 nurses per 1,000 population as compared to WHO recommendations of 1 doctor and 2.5 nurses per 1,000 population respectively.
 - Moreover, healthcare accessibility is uneven across the country, with a significant gap between rural and urban areas.
- AI can alleviate this shortage by enabling doctors to consult patients remotely through telemedicine, thereby reaching those in remote areas.
- AI tools can quickly analyze medical tests and images, aiding doctors in making accurate diagnoses.
- As per Harvard's School of Public Health, using **AI** to make **diagnoses** may **reduce treatment costs** by up to **50%** and **improve health outcomes** by **40%**.
 - According to research by Accenture, AI might save the Indian healthcare sector \$4.4 billion by 2025.
- **Economic Survey** 2022-23, highlighted that **nearly half** of all **health spending** in **India** is still **paid out-of-pocket** by patients.
 - Thus, implementing AI in healthcare can reduce costs, making treatments more affordable and accessible.

Potential use cases of AI in Healthcare



AI expenditure in Healthcare industry

- According to a NASSCOM report, India's healthcare industry was valued at \$372 billion in 2022 and is expected to grow at an annual rate of 20% from 2023 to 2030.
- According to the World Economic Forum, AI expenditure in India will be about \$11.78 billion by 2025 and contribute \$1 trillion to the **economy** by 2035.
- The AI in Healthcare Market is set to grow from **\$14.6 billion** in **2023** to **\$102.7 billion** by **2028**.

Steps Taken to Implement AI in healthcare

- The NITI Aayog is working with Microsoft and Forus Health to develop automated solutions
- The Maharashtra government, focusing on rural healthcare, has **signed a MoU** with **NITI Aayog** to

for early detection of diabetic retinopathy.

About Bio-Imaging Bank

- A Bio-Imaging Bank refers to a digital archive of medical images, specifically:
 - Radiology images: X-rays, CT scans, MRIs,
 - Pathology images: Images of tissues or cells obtained through microscopy or other techniques.

Challenges in Implementing AI in Healthcare

Implementing AI in healthcare in India faces several challenges that need to be addressed to ensure successful adoption and integration.

- Data Quality and Availability: Limited access to high-quality, labelled healthcare data needed to train AI models and fragmented patient data across different systems.
- Infrastructural Inadequate digital infrastructure and poor internet connectivity, especially in rural areas.
- Skill Gap and Training: Shortage of professionals skilled in both AI and healthcare
- Regulatory and Ethical Issues: Such as lack of a comprehensive regulatory framework regarding AI use in healthcare, risks to patient data privacy, biases in training data leading to unfair diagnoses, accountability issues, and potential healthcare disparities.
- Financial Constraints: High initial costs of integrating AI into healthcare.
- Awareness and Adoption: Resistance from healthcare providers and patients, and lack of awareness about AI benefits.
- Interoperability: Absence of standardized protocols for data exchange between healthcare systems.
- Cultural and Socioeconomic Factors: Diverse healthcare needs and socioeconomic disparities, leading to unequal access to AI technologies,

- unveil the International Centre for Transformational Artificial Intelligence.
- Government is linking AI to Ayushman Bharat Digital Mission to develop local public health strategies to improve preventive care and overall healthcare outcomes.
- Mumbai's **Tata Memorial Hospital** is creating a 'Bio-Imaging Bank' by using AI, for early-stage cancer detection.
- Union Budget 2024-25 allocated INR 90,958 crore to the health sector to boost the healthcare infrastructure, and undertak innovation-based healthcare initiatives.
- The goal is to create a repository encompassing radiology and pathology images, along with other clinical information and additional metadata.
- This comprehensive resource is strategically designed for the training, validation, and rigorous testing of AI algorithms.

especially in underserved communities.

Steps to Overcome the challenges

- A comprehensive and collaborative approach is needed for improving data quality and availability.
- There is a need for significant investment in infrastructure and training.
- There is the need for continuous training **programs** to address the skill gaps.
- Collaborative efforts between government, private sector, and academia are crucial for successful AI integration.
- Apart from these **developing regulatory** frameworks, raising awareness, building trust and reliability, and addressing cultural and socioeconomic barriers are required.

Thus, the application of AI in healthcare in India holds immense potential to revolutionize the medical landscape by improving accessibility, efficiency, and quality of care. By addressing key challenges, India can harness the power of AI to deliver more accurate diagnostics, personalized treatments, and effective healthcare management, creating a more equitable and robust healthcare system.

Q. Artificial Intelligence (AI) has the potential to improve the access to healthcare for millions of people in India. In this context describe briefly the advantages of Implementing AI in the healthcare sector? 150 words/10 marks)

Indo-Pacific Economic Framework (IPEF)

Syllabus: GS II - International Organisation

Why in the News?

The Union Cabinet will soon decide on the proposal to seek approval for signing of IPEF (Indo-Pacific Economic Framework for Prosperity) bloc's agreements on clean and fair economy.

About Indo-Pacific Economic Framework (IPEF)

• It is basically an **U.S.-led economic** grouping comprising **14 countries** which

- includes Australia, Brunei, Fiji, India, Indonesia, Japan, South Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand and Vietnam.
- It accounts for about 40% of global GDP and about a third of global goods & services trade.
- IPEF is structured around four pillars relating to trade, supply chains, clean economy and fair economy (issues like tax and anti-corruption).
 - India has joined all the pillars except the trade pillar.
- It is a voluntary, non-binding initiative.



Significance of Indo-Pacific Economic Framework (IPEF)

- **Boost economic growth:** In the Indo-Pacific region by promoting high-standard, inclusive, and fair-trade, investment, and cooperation.
- Promotes growth of Digital Economy: In the region by supporting the expansion of digital trade, e-commerce, and collaboration on cybersecurity.
- Prioritizes
 Development:
 To improve regional connectivity, foster sustainable transportation and communication networks across the Indo-Pacific.
- **Enhanced resilience:** Help to make the region's economies more resilient to shocks by strengthening supply chains and

- reducing dependence on any single country.
- Improve transparency & accountability: By promoting tax transparency and combating corruption.
- Environmental Standards: Emphasizes on sustainable practices and environmental standards, contributing to the global effort to combat climate change.
- Contributes to Regional Stability: By strengthening economic ties among Indo-Pacific countries.
- Promotes balanced geopolitical landscape: Serves as a strategic counterbalance to the influence of other major powers such as China in the region.

Significance of of Indo-Pacific Economic Framework (IPEF) for India

- Enhanced Market Access: IPEF's aims to create a regional trade ecosystem, allowing India to export more goods and services to member countries.
- Attract Foreign Investments: Creating a transparent business environment through IPEF can mobilize investment and economic growth in India.
- Integration into Regional Value Chains: Deeper economic ties through IPEF can help India integrate more effectively into regional supply chain networks.
- **Countering China's Influence:** IPEF offers India a platform to strengthen its economic partnerships in the Indo-Pacific region.
- Digital Economy: IPEF's emphasis on digital trade, could push India to further develop its digital infrastructure and ecommerce sector.

Challenges of Indo-Pacific Economic Framework (IPEF)

• It is often argued that IPEF lacks

inclusiveness as it **does not adequately represent** the **interests** of all **countries** in the Indo-Pacific region.

- Critics question the feasibility of the grouping, noting that the U.S. have clarified that it will not be a free trade agreement or address tariff reductions or market access.
- It is still **too early** to say whether the IPEF will be effective in achieving its goals.
- The **volatility** of **domestic politics** raises **concerns** about **IPEF's durability**.
- The regional partners still remember the US's sudden withdrawal from the Trans-Pacific Partnership which raises concern regarding the credibility of the IPEF.
- The IPEF is considered to be the US's way to counter China's influence in the Indo-Pacific region which could increase geopolitical tensions in the region.

Q. Critically examine the aims and objectives of Indo-Pacific Economic Framework (IPEF). What importance does it hold for India?

India-Austria

Syllabus: GS II - International Relations

Why in the News?

During the Prime Minister's recent visit to Austria, India and Austria have agreed to a future-oriented "bilateral sustainable economic and technology partnership". The visit also coincided with the 75th anniversary of diplomatic relations between India and Austria.

• This is the first visit by an Indian PM to Austria in 41 years.

Key Highlights of the Visit

- Political and Security Cooperation
 - Both leaders reaffirmed their commitment to a free, open, and rules-based Indo-Pacific, adhering to international maritime law.
 - They agreed that **achieving** lasting **peace** in **Ukraine** requires **involving** all

stakeholders.

- Sustainable Economic Partnership
 - The leaders set a stronger economic and technology partnership as a strategic goal.
 - They welcomed the Start-Up Bridge initiative linking their innovation and start-up ecosystems.
 - They committed to keeping the global average temperature rise well below 2 degrees Celsius above pre-industrial levels.

Multilateral Cooperation

- Both leaders reiterated their commitment to comprehensive UN reforms, including the Security Council.
- India supported Austria's UNSC candidature for 2027-28, and Austria backed India's candidature for 2028-29.

Key Areas of Cooperation Between India-Austria

Background	Diplomatic relations between India and Austria were established in 1949.
Economic Cooperation	 The total bilateral trade between Indo-Austria for 2021 was USD 2.47 billion. The bilateral trade between both the countries is quite balanced, with Indian exports to Austria were USD 1.29 billion and imports were USD1.18 billion.
Space Cooperation	Austria's first two satellites TUGSAT-1/BRITE and UniBRITE were launched by India's PSLV-C20 in 2013.
Cultural Ties	 The Indo-Austrian cultural relations go back to the 16th century when Balthasar Springer travelled from Austria to India. The visit of India's Nobel Laureate Rabindranath Tagore twice to Vienna was one of the crucial bridges of cultural and intellectual exchange between the two countries.
Diaspora	There are an estimated over 31,000 Indians living in Austria.

About Austria

- Austria is a mountainous landlocked country of south-central Europe.
- It is **bordered** to the **north** by the **Czech Republic**, to the **northeast** by **Slovakia**, to the **east** by **Hungary**, to the **south by Slovenia**, to the **southwest by Italy**, to the **west by Switzerland** and **Liechtenstein**, and to the **northwest by Germany**.



Q. India and Austria recently celebrated the 75th anniversary of their diplomatic relations. In this context examine the key areas of cooperation between India and Austria. (150 words/10 marks)

Decline in Child Marriages in Assam**

Syllabus: GS V - Social Issues in Assam

Why in the News?

A recent report highlighted that Legal intervention by the Assam government has reduced child marriages in the state.

Highlights of the Report

- The report titled 'Towards Justice: Ending Child Marriage', was prepared by child rights organization India Child Protection.
- It revealed a **81% reduction** in the **cases** of **child marriage** across **20 districts** of Assam between 2021-22 and 2023-24.
- As per the report the Assam model was effective in ending child marriages in 30% of villages and leading to a decline in such cases in 40% of villages.

 The report further states that about 90% of the people in Assam believe that prosecution is the key to ending child marriage.

Key Recommendations Highlighted in the Report

- It recommended the **creation of fast-track courts** to clear the backlog.
 - In 2022, out of the total 3,563 child marriage cases listed in courts, a mere 181 cases were successfully concluded, showing a pendency rate of 92 %.
- Punishment should be doubled and treated as equivalent to criminal conspiracy for rape to the parents, guardians or panchayats who had provided an undertaking.
- The report also revealed the urgency required in the legal system across the country to end child marriage.

India Child Protection (ICP)

- It was **established** in **2005** as a child rights protection organization.
- It focuses on **combatting child sexual abuse** and **related crimes**, including child trafficking, exploitation of children in the digital space, and child marriage.
- The ICP is one of the civil society organisations leading the **Child Marriage Free India (CMFI)** campaign.

About the Issue of Child Marriage in Assam

- Assam has been dealing with the social menace of child marriage since a long time.
 - In Assam, on an **average 31%** of **girls** are **married off** before the legal marriage age of 18 according to a report by the health department.
 - As per 2011 Census, 2.6 lakh children in Assam were married off before the age of 18, making it among the top 15 states maximum child marriage cases.
- Assam has seen a rise in child marriages in the recent years and the practice is thriving amongst the State's tribal communities.
 - As per National Crime Records Bureau (NCRB) 2021, Assam saw an increase in

- child marriages from 30.8% to 31.8% in the 2019-21 period.
- Dhubri has been reported to have the most child marriages in Assam, followed by Barpeta, Nagaon, and other areas where the minority population is more prevalent.
- There have also been reports of child marriages in upper Assam's Dhemaji, Majuli, and Sivsagar districts.

Causes of Child Marriage in Assam

- **Poverty**: Economic hardship drives families to marry off their children early, believing it will reduce financial burden.
- Lack of Education: Limited access to education and awareness contributes to the perpetuation of child marriage practices.

- Cultural Traditions: Deep-rooted cultural and social norms often support early marriage as a traditional practice especially among the Adivais, Bodo, and Santhals.
- Religious factor: Child marriage is prescribed as a religious practice among some of the Muslim population in Dhubri and Nagaon.
- Societal Norm: Girls are often seen as having no role beyond marriage and are expected to assist with household duties and chores so they are married off early.
- Gender Inequality: Societal preference for male children and the undervaluing of girls' education and rights lead to early marriages.
- Inadequate Legal Enforcement: Weak enforcement of laws prohibiting child marriage allows the practice to continue unchecked.
- Fear of Sexual Violence: Parents may marry off their daughters early to protect them from the threat of sexual violence and harassment.
- **Dowry System**: Early marriage is sometimes seen as a way to reduce the dowry amount required for older brides.
- Lack of Access to Healthcare: Inadequate healthcare infrastructure and services contribute to early marriages, as families seek to ensure security and care for their daughters through marriage.
- Migration: Seasonal migration for work leaves children, especially girls, vulnerable to early marriage due to lack of parental supervision and support.

Consequence of Child Marriage

- Child marriage contributes significantly to maternal mortality.
 - Assam has one of the highest MMR in the country with 195 deaths per lakh live births.
- It **hinders** the achievement of **gender equality**.
- Child brides are at higher risk of contracting sexually transmitted

diseases.

- Early marriage increases the risk of complications during pregnancy and childbirth.
- Child marriage increases the risk of mental health issues such as depression and anxiety.
- It also leads to loss of childhood and personal development of the Child brides.
- It **violates children's rights** and legal protections.

Steps taken to Erradicated Child Marriage in Assam

- The Assam Government abolished the Assam Muslim Marriages and Divorce Registration Act and Rules of 1935, which permitted underage marriages under specific conditions.
- The government launched a two-phase drive against child marriage last year, resulting in numerous arrests and case registrations.
- Strengthening laws against child marriage, including rigorous implementation of the Prohibition of Child Marriage Act, 2006 and Protection of Children from Sexual Offences (POCSO) Act, 2012.
- Assam Centre for Rural Development (ACRD), an NGO working on child rights and human trafficking in Assam launched a 'Child Marriage Free India' campaign in Assam.
- Conducting widespread public awareness campaigns through NGO's, District Child Protection Units etc to educate communities about the harmful effects of child marriage and the legal age of marriage.
- Promoting girl child education through schemes like the Mukhya Mantri Nijut Moina (MMNM) to encourage school attendance and reduce dropout rates.

Q. Despite existing legislations, child marriage is still prevalent in Assam. Discuss the major factors responsible for this. (150 words/10 marks)

River Embankments in Assam**

Syllabus: GS V - Environmental Degradation

Why in the News

In recent times the scale and impact of embankments has fundamentally altered the relationship between rivers and Assam's residents and increased the flood intensity in the state.

Flood in Assam

- **Floods** are **not unusual** for **Assam** with 40% of the total area of the state prone to flood, as per National Flood Commission.
- However, evidence suggests that the intensity and impact of the annual floods have increased after the Assam earthquake of 1950.
- The 1950's earthquake of 8.6 magnitude, like many earlier ones (for instance, the one in 1897), introduced several changes in Assam's environment.
- The effects of these changes were seen in Assam's rivers, including the Brahmaputra, other water bodies, and paddy fields, most of which failed to revert to their original state.
 - For instance, multiple landslides caused as a result of the earthquake filled the river bed with siltation.
- The environmental crisis of 1950 aggravated Assam's annual flooding pattern, effects of which were felt from 1952 onwards in the form of recurrent and intense floods.

How has Assam Dealt with the Issue of Recurring Floods?

- In 1950, the **Assam Government asked** the **centre to build embankments** to help the state overcome overwhelming floods.
- In 1951, a committee headed by G R Garg of the Central Waterways, Irrigation and Navigation Commission, was appointed by the government.
- The Garg committee, however, warned against any move to build embankments.

It highlighted that:

- "In nature's economy, land building and drainage of its basin are the two main functions of a river".
- Embankments might serve a useful purpose if the rivers were stable and carried little silt.
- But if the rivers carried huge amounts of silt, embankments would probably cause more harm than good.
- Embankments will also upset the land building process and drainage systems as flood help in restoring the fertility of the plain by bringing in fresh alluvial soil

Construction of Embankment in Assam

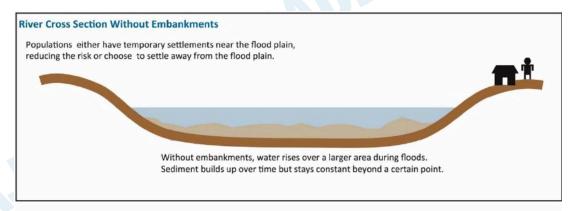
- Despite the apprehensions of the Garg committee, Assam pushed for building of embankments.
- Thus, between the 1950s and 1970s, thousands of km of embankments were constructed along the Brahmaputra, the Barak, and their numerous tributaries.
- Embankments were the first major direct intervention aimed at controlling water flow on such a vast scale.
- Embankments would restrict the river from flooding fields, damaging crops, properties, livestock.
 - It also prevents land inundation and makes more land available for human settlement.
- Embankments were however a short-term solution to the recurring problem of flood in Assam.

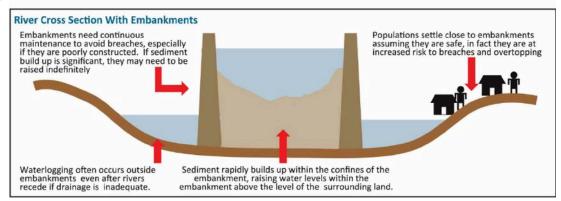
Key Issues with Embankments

- Deterioration Condition: Many embankments in Assam are old and have exceeded their lifespan, leading to regular breaches and failures.
 - Since the 1950s, 423 embankments were built along Brahmaputra and its tributaries, out of these, 295 are believed to have outlived their intended lifespan.

- Severity of Floods: Embankment breaches often lead to more severe flooding, as the water is released with greater force and spread over a larger area.
 - Assam has recorded over 530 embankment breaches since 2011.
- **Obstruction of Water Retreat:** It can prevent floodwaters from receding back into the river after a flood, leading to prolonged waterlogging and damage.
- **Ecosystem Disruption:** By altering the natural water flow, it affects the aquatic and terrestrial ecosystems.
- "Embankment Economy": The construction and maintenance of embankments have become a lucrative business for contractors, engineers, and politicians, leading to a focus on this solution despite its drawbacks.
- Dependency Issue: Flooding in Assam is aggravated by the over-reliance on, unscientifically built and misuse of embankments.

- Affect on Agriculture: Paddy fields needed more artificial manure as flood waters stopped replenishing these fields with nutrients.
- **Disrupting rivers-land connection:** As the floodplains became drier, human habitation moved closer to the river, putting their lives and properties at risk.
- **Financial Strain:** Embankments were constructed using government finance as a result of which Assam had to use a significant portion of its annual income to build and sustain this infrastructure.
- Worsening Assam's situation: National Flood Commission (1976-1980), highlighted that embankment has resulted in deposition of coarse silt and sand on the beds and banks of the river.
 - As a result the river beds are now often above the countryside. This dangerous situation would bring devastation when embankments would be breached.





As of now new construction of embankments has significantly disappeared but the miscalculating of the previous decades continues to affect the present generation. As a result of which Assam still grapples with the consequences of ignoring the region's complex riverine history in flood-control projects.

Q. Critically evaluate the role of embankments as a measure of flood control in the state of Assam. (150 words/10 marks)

Awards

1. World Space Award

- Chandrayaan-3 has recently been awarded the World Space Award by the International Astronautical Federation (IAF).
 - Last year Chandrayaan-3's success made India world's first country to have landed near the lunar South Pole.
- Besides India, only the US, Russia and China have achieved the miles of soft landing on the moon.
- The IAF World Space Award is presented for an outstanding contribution in space science, space technology, space medicine etc. having exceptional impact to the world's progress in astronautics.

Defence

2. INS Teg

- The Indian Navy warship INS Teg assisting in search and rescue for the capsized Comoros-flagged Oil Tanker MV Prestige Falcón, has rescued nine crew, off the Oman coast.
- INS Teg (F45) was the first of three Talwar-class guided missile frigates that India commissioned Russian shipyard Yantar to build under Project-17 A.
 - The other two are INS Tarkash and INS Trikand.
- The Talwar-class guided missile frigates are modified Krivak III-class frigates built by Russia.
- INS Teg was commissioned into Navy service on 27 April 2012.
- It is about 3,970-tonne frigate and is armed with eight BrahMos supersonic cruise missiles.
- It is about 125-metre-long and can operate an anti-submarine or earlywarning helicopter.
- It can reach a top speed of 30 knots (56 km/h).
- It has an **operating range of 4,500 nautical miles** (8334 km).

Exercises

3. Exercise Pitch Black

- An Indian Air Force (IAF) contingent, recently landed at the Royal Australian Air Force (RAAF) Base Darwin, Australia for participating in Exercise Pitch Black 2024.
- It is a biennial, multi- national exercise hosted by the RAAF.
- The IAF has previously participated in the 2018 and 2022 editions of this exercise.
- The exercise provides an excellent opportunity for strengthening the ability of the participating nations to deploy over large distances, support integrated operations in the Indo-Pacific region.
- The exercise would provide IAF with an opportunity towards force integration with participating nations and mutual exchange of best practices.
- This year's edition is slated to be the largest in the 43 year long history of Ex Pitch Black, which includes participation by 20 countries.

Schemes

4. Mukhya Mantri Ayushman Asom Yojana (MMAAY)**

- The Cabinet recently approved ₹375 crore for the Mukhya Mantri Ayushman Asom Yojana (MMAAY) for 2024-25.
- It is a family floater health insurance scheme offering cashless medical treatment of upto Rs. 5 lakh per family, per year.
- Its aim is to promote accessible and affordable healthcare facilities in the state.
- Under this scheme, beneficiaries get health facilities in more than 300 empanelled hospitals in Assam and all the AB-PMJAY empanelled hospitals across the country.
 - Approximately 2.6 million beneficiary families are covered under the scheme

Miscellaneous

5. Tea Mosquito Bug

- The tea industry has faced annual infestations of the tea mosquito bug (Helopeltis theiovora) for nearly three decades, making it a recurring and severe problem.
- The bug damages tender tea shoots by puncturing leaves and stems to suck out nutrients while secreting toxic enzymes.
- It also paralyzes the growth hormones, halting new leaf emergence for over three weeks.
- The pests also destroy chlorophyll, turning the leaves dark black and preventing regrowth.
- It is black in color with red thorax, black and white abdomen and greenish brown wings.

6. Chandipura Virus (CHPV)

- Recently six children have died of suspected Chandipura virus (CHPV) infection in Gujarat.
- CHPV is a virus from the Rhabdoviridae family, which includes the lyssavirus that causes rabies.
- It is primarily **transmitted** through the **bit** of the **infected-vectors**.
- Vectors of CHPV include sandflies like Phlebotomine sandflies and Phlebotomus papatasi, as well as mosquitoes such as Aedes aegypti.
- The virus **primarily affects childrens** under the age of 15. However, this **disease** is **not contagious**.
- The virus was **first identified** in **1965** in **Chandipura**, of Maharashtra, India.
- There is **no specific antiviral treatment** or **vaccine** for Chandipura virus infection.

7. Gas reserves at dirok

- Recently a gas discovery has been made in an untested layer in Dirok-1 Well in Margherita in Assam's Tinsukia district.
- The well is operated by a joint venture of Hindustan Oil Exploration Company (HOEC), Oil India Limited (OIL) and the Indian Oil Corporation Limited (IOCL).
- This development aims to increase gas production capacity from 35 million standard cubic feet per day (mmscfd) to 55 mmscfd.

8. Pathology Heritage in Assam Medical College**

- Assam Medical College (AMC) has recently inaugurated the newly renovated Pathology Heritage in AMC Dibrugarh.
- The pathology museum houses over 1500 specimens collected since 1991.
- The Heritage Conservation Society of Assam declared the museum a heritage centre.

9. Pink bollworm (PBW)

- Pink bollworm pest has affected cotton crop in parts of Gujarat, Andhra Pradesh (AP) and Maharashtra, as resistance to the pest in some transgenic varieties has reduced.
- The infestation by PBW has been common in the cotton belt of the country since 2021.
- Scientific Name: Pectinophora gossypiella (Saunders)
- PBW larvae burrow into the developing bolls of cotton plants, its damage affects both the weight and quality of the harvested bolls.

10. SDG index

- Niti Aayog recently released the fourth edition of the SDG India Index 2023-24.
- SDG India Index measures and tracks national progress of all States and UTs on 113 indicators.
- NITI Aayog categories the performance of states/UTs in terms of four groups viz.
 - Aspirant-score between 0-49
 - **Performer** score of 50-64
 - **Front Runner** score of 65-99
 - **Achiever score** score of 100
- **3 states of Northeast** namely **Manipur**, **Assam**, **Arunachal Pradesh** made its entry in the "**Front Runner**" **category** with scores of 72, 65 and 65 respectively.
- Assam's rank too improved to 23rd points as compared to 26th out of 28 states in the previous assessment.
- Moreover, Assam was amongst the fastest moving states between 2018 and 2023-24 in terms of implementation of the SDGs.



11. Elephant

- A recent survey has detected a huge decrease in the number of wild elephants in the forest of Kerala.
- Elephants are a **keystone species** and are **matriarchal**, meaning they live in female-led groups.
- The elephant's **gestation period** is **18 to 22 months**, and the calf is nursed for 2 to 4 years.
- There are three species of elephants: African Forest Elephant (CR), African Savanna Elephant (EN), and Asian Elephant (EN).
- There are **three subspecies** of **Asian elephant** i.e. Indian, Sumatran, and Sri Lankan.
- Conservation status of Asian elephants:

• IUCN: Endangered

• **CITES:** Appendix I

• WPA: Schedule I

- India is home to 60% of the Asian elephant population.
- Karnataka (25%) has the highest elephant population in India followed by Assam, Kerala, Tamil Nadu, Odisha and Uttarakhand.
- India declared the elephant as a national heritage animal by acknowledging its ecological sensitivity.

12. North East Region Agri Commodity E-Connect (NERACE) app**

- Recently, the union minister of communications and development of the North Eastern Region (DoNER) announced the launch of North East Region Agri Commodity E-Connect (NERACE) app and web portal.
- The NERACE app is **intended to support agricultural and horticultural products** and will **promote Northeast** as a **reliable partner** in the **international agricultural value chain**.

- NERACE app **aims** to **integrate farmers and sellers**, enhancing agricultural connectivity in the North Eastern Region.
- The app and web portal are expected to bring together 50,000 farmers and 5,000 buyers over the next five years.
- NERACE will promote local specialities like Black Rice, Kiwi, Large Cardamom, and medicinal plants in domestic and international markets.

13. Phlogacanthus Sudhansusekharii

- Researchers from the Botanical Survey of India have discovered and described a new plant species from Itanagar Wildlife Sanctuary.
 - **Itanagar Wildlife Sanctuary** is located in the southwest part of **Arunachal Pradesh**.
- The species, named Phlogacanthus sudhansusekharii, belongs to the family Acanthaceae Phlogacanthus genus.
- The genus 'Phlogacanthus' comprises 13 species in India and is spread over mainly the northeastern and eastern Himalayan states.

14. Wolbachia method

- The World Mosquito Program is reporting considerable success in reducing mosquito borne diseases and reporting remarkable results by using something called the Wolbachia method.
- Wolbachia are safe, naturally occurring bacteria present in up to 50% of species, including some mosquitoes.
- However, Wolbachia is not usually found in the Aedes aegypti mosquito which is responsible for transmitting viruses such as dengue, Zika, chikungunya and epidemic yellow fever.
- The Wolbachia method is considered a form of biological control rather than genetic engineering.
- In this method, naturally occurring Wolbachia bacteria can be introduced into male population by infecting insects in a laboratory setting and then releasing them into the wild.
- As the **Wolbachia-infected insects' male mate** with **females** that are not infected with the same strain of Wolbachia, these bacteria are passed on to their offspring.
- As a result of these bacteria's mosquitos offspring are less likely to survive or reproduce.

District At a Glance

Geography of Bongaigaon

- The district is situated in the western part of Assam and comes under the Lower Assam Division.
- It lies in the **northern Bank** of the **River Brahmaputra**.
- District Boundary:

• North: Chirang district

• **South:** Goalpara District

• East: Barpeta District

• West: Dhubri & Kokrajhar District

• **Geographical Area:** 1093 sq. km.

 Population Density: 676 people per sq. km

- **Sub-Division:** Bongaigaon(Sadar), North Salmara(C) and Manikpur(C)
- Revenue Circle: Bongaigaon, Boitamari, Srijangram, Manikpur, Dangtol
- The principal tributaries of Brahmaputra that flows through the district are Manas, Kujia and Champavati.
- Among these, Manas is the largest tributary and forms the eastern boundary and the river Champavati forms the western boundary of the district.

History of Bongaigaon

- The Government of Assam in 1989 decided to create a new district of Bongaigaon by curving out some areas of the Goalpara and Kokrajhar District.
- The name Bongaigaon is said to have originated from the word "Bon-Gai-Gaon" where Bon stands for wild and gai stands for cow.

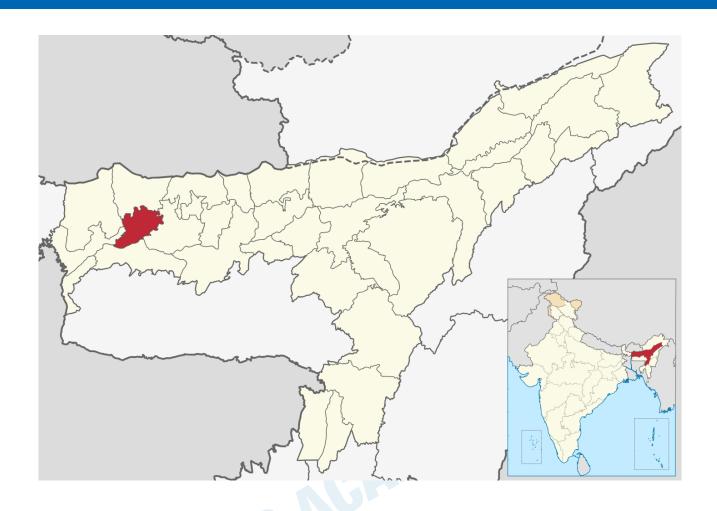
Places of Interest

• Naakkati Hills: Nakkati is a local name in Assamese language which means "Cutting

Nose".

- The people of the locality believe Maa Maharani (Goddess Parvati) had mythological relation with this hill; they also built a temple of the goddess in the village.
- Rock Cut Cave (Jogighopa): The five rockcut caves at Jogighopa on the bank of the Brahmaputra are the unique examples of rock-cut architecture of the Salasthambha period in Assam.
- Lalmati Duramari Ganesh Mandir: It is located near Abhayapuri at Khagrapar hills, in Bongaigaon, and is one of the oldest temples of the state.
 - The carving and structures of the idols, the temple and its images are estimated to belong to the 8th to 10 century AD.
- **Bagheswari Temple:** It is the central and oldest Temple of Bongaigaon town area.
 - According to Hindu mythology, this is the place where Devi Durgas Trishul fell down when her body was cut into pieces by Lord Vishunu just after Dakshya Yagya.
 - It is dedicated to one of the oldest 51th shakti Peeths of Maa Parvati.
- 'Bhairabsura' hill: There are some statues
 of Lord Shiva made by stone that were
 recovered at the Peak of the hill.
- **Bagheswari Hill:** It has an ancient Lord Shiva temple located inside a cave.
 - Bageswari Temple and Baba Taraknath Temple are seen on either side of the cave.
- **Beels:** Tamranga Beel and Koyakujiya Beels are some other attractions of the district.

Q. Locate the neighboring districts surrounding Bongaigaon district in the given map.





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