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VOL. II ISSUE 06

Varthaman

MONTHLY CURRENT AFFAIRS MAGAZINE
BY RV TRAINING ACADEMY

TEA PLANTATION

India is the 2nd largest tea producer and largest black tea producer after China and 4th largest exporter of Tea in the world

Tea requires cool to warm temperature with at least 5 hours of sunlight per day.

- + THE TELANGANA- ANDHRA PRADESH WATER DISPUTE
- + RBI DIVIDENDS TO GOVERNMENT
- + PACIFIC OCEAN LEAK
- + SC ALLOWS JALLIKATTU AND KAMBALA

CURRENT AFFAIRS
& PRACTICE QUESTIONS

ADMISSIONS OPEN

NEW BATCH STARTS AUGUST 2023

COURSE HIGHLIGHTS

- BASIC NCERT FOUNDATION
- PRELIMS CLASSES
- WEEKLY CURRENT AFFAIRS
- MAINS UPGRADATION
- ANSWER WRITING PRACTICE
- PERSONALISED MENTORING
- STUDY MATERIALS

RV TRAINING ACADEMY



Bankim Chandra Chatterjee

Bankim Chandra Chatterjee also known as Chattopadhyay was an Indian novelist, poet, essayist and journalist. Chatterjee was an Indian author who is considered one of the pioneers of modern Indian writing. He was one of the first authors to write novels in Bengali and is credited with introducing realism into Bengali fiction. He also wrote patriotic songs, including Vande Mataram, which played an important role in the Indian Independence Movement.

Chatterjee was born on June 26, 1838, in Naihati, Kolkata. He was the son of a prosperous civil surgeon and studied at Presidency College, Kolkata, and then at Hindu College, Calcutta. After graduating in 1856, he joined the Indian Civil Service but resigned in 1858 to devote himself to a literary career. After completing his degree, Bankim started working as an assistant editor at a magazine called Tattwabodhini Patrika. The British authorities were not happy with the way Bankim portrayed them in his work. Undeterred, Bankim continued to write and publish novels that were critical of the British rule.

Chatterjee's literary career began with his first novel Durgeshnandini (1865), which was followed by Kapalkundala (1866), Mrinalini (1869), Vishabriksha (1873), and Chandrasekhar (1877). His most famous novel is Anandamath (1882), which contains the National Song of India - Vande Mataram.

Chattopadhyay is widely regarded as a key figure in literary renaissance of Bengal as well as the broader Indian subcontinent. Some of his writings, including novels, essays and commentaries, broke away from traditional verse-oriented Indian writings, and provided an inspiration for authors across India.

He passed away on April 8, 1894, in Calcutta.

Legacy

- Tagore penned in the memory of his mentor:

"Bankim Chandra had equal strength in both his hands, he was a true sabyasachi. With one hand, he created literary works of excellence; and with the other, he guided young and aspiring authors. With one hand, he ignited the light of literary enlightenment; and with the other, he blew away the smoke and ash of ignorance and ill conceived notions"

- Sri Aurobindo wrote in his memory:

"The earlier Bankim was only a poet and stylist, the later Bankim was a seer and nation-builder"

- His novel Anushilan-Tattva inspired Pramathanath Mitra to start Anushilan Samiti.
- Bankim Puraskar (Bankim Memorial Award) is the highest award given by the Government of West Bengal for contribution to Bengali fiction.

Purpose of the magazine

The purpose of Varthaman is to focus solely on issues which are relevant to the actual as well as applied aspects of the General Studies syllabus. The unique way the "Varthaman" team puts forward the facts and analysis would help you understand, retain and reproduce the information during the journey towards toppers' list.

The sources relied for selection and application of issues

The Hindu
The Indian Express
Times of India
PIB
Live Mint
Hindustan Times
News on Air
Prasar Bharati website
IDSA Website
NASA website
PRS India Website
Down to Earth
Rajya Sabha TV website
Lok Sabha TV website
Economic and Political Weekly
Yojana
Kurukshetra
NITI Aayog reports
BBC

Features of the magazine

Current Affairs Analysis

- This month's edition covers the analysis of news from the immediately preceding month.
- The news are categorized subject wise viz. Polity, Economics, Environment and Ecology, Science and Technology, International Relations, etc. for easy and efficient study.
- Lead articles on burning issues are included.

Practice Questions

- Prelims Practice Questions
- Mains Practice Questions

• Disclaimer

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A War Based On Satyagraha Is Always
Of Two Kinds. One Is The War We
Wage Against Injustice And The
Other We Fight Against Our Own
Weaknesses.

-- SARDAR VALLABHBHAI PATEL --



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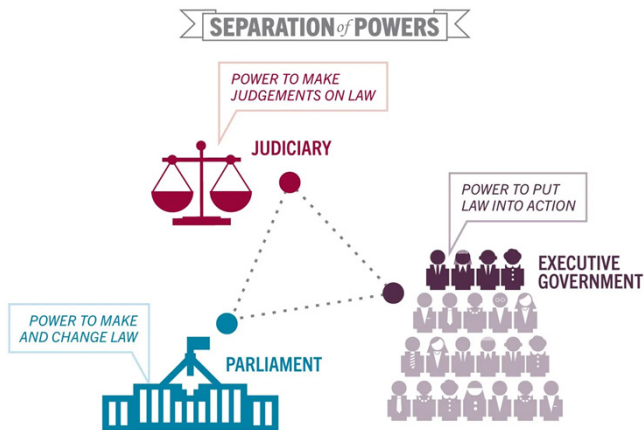
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POLITY AND GOVERNANCE

SEPARATION OF POWER DOCTRINE

In News: The Supreme Court has held that the independence of district judiciary is part of the basic structure of the Constitution and judicial independence from the executive and the legislature requires the judiciary to have a say in matters of finances. This important statement is part of judgement in the All India Judges Association vs. Union of India case.



More on the Topic:

- Even during the period of the pandemic, the district judiciary was efficient and undertook its functions to ensure that justice was delivered in a timely manner.
- It is thus important to recognise that the district judiciary is a vital part of the independent judicial system, which is, in turn, part of the basic structure of the Constitution.
- The judgment highlighted the doctrine that the “judiciary must possess the inherent power to compel payment of those sums of money which are reasonable and necessary to carry out its mandated responsibilities, and its powers and duties to administer justice”.
- This doctrine is only the logical conclusion of separation of powers and ensures that the independence of the judiciary is secured.

About District Judiciary:

- District judge is the highest judicial authority in the district.
- Organisational structure, jurisdiction and nomenclature of subordinate judiciary are laid down by states. Hence, they differ slightly from state to state (Broadly three tiers below high court)

- Appointment, posting and promotion of district judges are made by the governor of the state in consultation with the High Court.

About Separation of Power Doctrine:

- The separation of powers doctrine in India is a fundamental principle that governs the functioning of the country's government.
- Article 50 says that states shall take steps to separate the Judiciary from the Executive.
- Although not explicitly mentioned in the Indian Constitution, the concept of separation of powers is implied through the constitutional provisions and the interpretation of the judiciary.
- In India, the separation of powers is based on the model derived from the British parliamentary system, with three distinct branches of government: Legislature, Executive and Judiciary.
- While the Indian Constitution does not strictly separate the powers, it establishes mechanisms to maintain checks and balances among the three branches. These include:
 - Independence of the Judiciary
 - Legislative Oversight
 - Judicial Activism etc.

Intermingling Powers Among the Branches:

- It is important to note that while the doctrine of separation of powers exists in India, there is some intermingling of powers among the branches.
- For example, the President, who is part of the executive branch, plays a role in the legislative process by giving assent to bills passed by Parliament. Similarly, members of the Council of Ministers, who are part of the executive, are also members of the legislature.
- Overall, the separation of powers doctrine in India aims to ensure a system of checks and balances, preventing concentration of power and protecting the rights and liberties of citizens.

ARTICLE 142

In News: A five-judge or constitution bench of the Supreme Court has recently held that a court can directly grant divorce under Article 142 of the Constitution, in cases where the marriage has irretrievably broken down, without referring the parties to a family court first, where they must wait for 6-18 months for a decree of divorce by mutual consent.



More on the Topic:

- Article 142 provides a unique power to the Supreme Court, to do **"complete justice"** between the parties, where, at times, the law or statute may not provide a remedy.
- In those situations, the Court can extend itself to put an end to a dispute in a manner that would fit the facts of the case.

How have courts exercised this power?

- While the powers under Article 142 are sweeping in nature, SC has defined its scope and extent through its judgments over time.
- In the Bhopal gas tragedy case ('Union Carbide Corporation vs Union of India'), the SC in 1991 ordered UCC to pay \$470 million in compensation for the victims of the tragedy.
- In doing so, the Bench highlighted the wide scope of Article 142 (1), adding that it found it "necessary to set at rest certain misconceptions in the arguments touching the scope of the powers of this Court under Article 142(1) of the Constitution".
- Prem Chand Garg case (1962): Demarcated contours for powers under Article 142. Court held that the order under Article 142 must not only be consistent with the fundamental rights guaranteed by the Constitution, but it cannot even be inconsistent with the substantive provisions of the relevant statutory laws.
- In the Supreme Court Bar Association vs Union of India (1998) Court held that powers under Article 142 are supplementary and could not be used to supplant or override a substantive law.

The criticism of Article 142 and how have courts countered it:

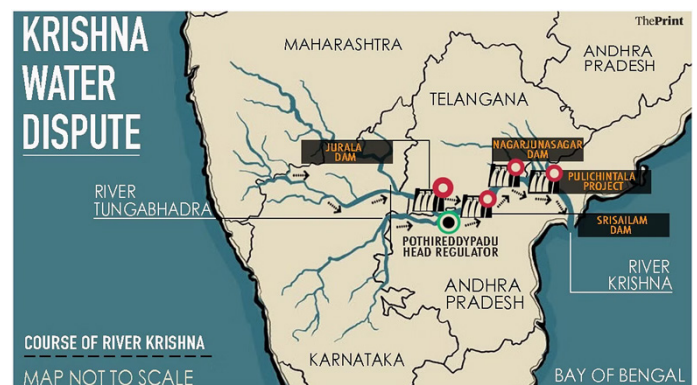
- **Arbitrary and Ambiguous:** The sweeping nature of these powers has invited the criticism that they are arbitrary and ambiguous.
- There is a possibility of arbitrary exercise

or misuse due to the absence of a standard definition for the term "complete justice".

- The court responded that, Defining **"complete justice"** is a subjective exercise that differs in its interpretation from case to case. Thus, the court has to place checks on itself.
- **Judiciary Cannot Be Held Accountable For its Actions:** Another criticism of the powers under Article 142 is that unlike the legislature and the executive, the judiciary cannot be held accountable for its actions.
- **Separation of powers doctrine:** Judiciary should not venture into areas of lawmaking and that it would invite the possibility of judicial overreach.
- Countering this criticism the apex court has imposed checks on its own power under Article 142.
- In 2006, the SC ruling by a five-judge Bench in 'State of Karnataka vs Umadevi' also clarified that "complete justice" under Article 142 means justice according to law and not sympathy.
- SC also added that it will **"not grant a relief which would amount to perpetuating an illegality encroaching into the legislative domain."**

THE TELANGANA- ANDHRA PRADESH WATER DISPUTE

In News: The nagging dispute over the water share of the Krishna river between Andhra Pradesh (A.P.) and Telangana remains unresolved, even nine years after the bifurcation of the combined State.



More on the Topic:

- In 1969, the Bachawat Tribunal (KWDT-I) was constituted to settle the dispute around water share among the riparian States of Maharashtra, Karnataka and Andhra Pradesh (before bifurcation).

- The Tribunal allocated 811 tmcft dependable water to Andhra Pradesh. The Andhra Pradesh government later apportioned it in the 512:299 tmcft ratio between Andhra (including parts of Rayalaseema which comprise the Krishna Basin) and Telangana, respectively, based on the command area developed or utilisation mechanism established by then.
- The Tribunal had also recommended taking the Tungabhadra Dam (a part of the Krishna Basin) water to the drought-prone Mahabubnagar area of Telangana.
- However, this was not followed through, giving birth to discontent among the people.
- Telangana had time and again reiterated how it had been meted out with injustice in Andhra Pradesh when it came to the matter of distributing water resources.

What was the arrangement for water sharing after the bifurcation?

- There is no mention of water shares in the Andhra Pradesh Reorganisation Act, 2014, since the KWDT-I Award, which was still in force, had not made any region-wise allocation.
- At a meeting convened by the then Ministry of Water Resources in 2015, the two States had agreed for sharing water in the 34:66 (Telangana:A.P.) ratio as an ad hoc arrangement with the minutes clearly specifying that it has to be reviewed every year.
- The arrangement in the Act was only for the management of water resources by setting up two Boards, the Krishna River Management Board (KRMB) and the Godavari River Management Board (GRMB).
- The KRMB, however, continued the same ratio year after year in spite of the opposition by Telangana. In October 2020, Telangana raised its voice for an equal share, till water shares are finalised.
- At a Board meeting held earlier this month, Telangana put its foot down for an equal share and refused to continue the existing arrangement. Unable to convince the member States, the river Board has referred the matter to the Ministry of Jal Shakti (MoJS).

What is the stand of the Centre?

- The Centre has convened two meetings of the Apex Council comprising the Union Minister and Chief Ministers of Telangana and Andhra Pradesh in 2016 and 2020 without making any attempt to deal with the issue.

- However, the Centre has not taken any decisions on the issue for over two years.

About Provisions in the Constitution relating to Water:

- Entry 17 of State List deals with water i.e. water supply, irrigation, canal, drainage, embankments, water storage and water power.
- Entry 56 of Union List empowers the Union Government for the regulation and development of inter-state rivers and river valleys to the extent declared by Parliament to be expedient in the public interest.
- According to Article 262, in case of disputes relating to waters:
- Parliament may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of, or in, any inter-State river or river valley.
- Parliament may, by law, provide that neither the Supreme Court nor any other court shall exercise jurisdiction in respect of any such dispute or complaint as mentioned above.

THE NATIONAL CAPITAL CIVIL SERVICE AUTHORITY (NCCSA)

In News: The President Promulgated the Government of National Capital Territory of Delhi (Amendment) Ordinance, 2023.

Empowering the LG

- 1 Top court's May 11 order nullified**
The move has effectively nullified SC's judgment of May 11, wherein a Constitution bench handed over the control of services in the national capital to the Delhi government, excluding those related to police, public order and land.
- 2 National Capital Civil Service Authority made**
Centre introduced a new chapter in the GNCTD Act, Part IVA, to create a new service commission for Delhi for the first time.
- 3 LG is strengthened**
The move makes the LG the final authority who can act on his 'sole discretion' in deciding the matters relating to transfer and posting of bureaucrats.

More on the Topic:

- The Ordinance creates a new statutory authority – the National Capital Civil Service Authority (NCCSA) – which will be headed by the elected Chief Minister of Delhi in addition to the Chief Secretary and the Principal Secretary of the Home department.

- The NCCSA will make "recommendations" to the LG regarding "transfer posting, vigilance and other incidental matters."
- Notably, all matters required to be decided by the body shall be decided by "majority of votes of the members present and voting."
- This means, that in effect, the decision of the elected chief minister can be overruled by the two senior bureaucrats.
- Furthermore, in case the LG differs with the recommendation made, they would be empowered to "return the recommendation to the Authority for reconsideration" and, in case of continuing difference of opinion, "the decision of the Lieutenant Governor shall be final." This effectively reverses the verdict delivered by the Supreme Court, which vested the Delhi government with final authority over the matter.

Background of the Issue:

- The recent Supreme Court verdict has given power of transfer and posting of bureaucrats to the elected Delhi Government.
- But the ordinance designates the Lieutenant-Governor (L-G) as the administrator of Delhi, with the final say on the postings and transfer of all bureaucrats serving the Delhi government which is a very clear departure from the SC verdict.

UNION PUBLIC SERVICE COMMISSION (UPSC)

In News: Dr Manoj Soni took the Oath as the Chairman of Union Public Service Commission.



More on the Topic:

- The Union Public Service Commission (UPSC) is a Constitutional Body under Article 315-323 Part XIV of the Constitution.

- It is the central recruiting agency of India.
- It conducts examinations for appointments to the All-India Services and various Group A and Group B Services of the Union.
- The Commission with a maximum of 10 members is headed by a Chairman.

Appointment, Removal and Tenure:

- The appointment of the Chairman and members of UPSC is given in the Article-316 of the Constitution.
- The Chairman and other members of UPSC shall be appointed the President of India.
- The Chairmen and members can be removed only by the President.
- The chairman and members hold office for a term of five years or until they attain the age of 65 years, whichever is earlier.
- Their salary is charged from the Consolidated Fund of India.

SC ALLOWS JALLIKATTU AND KAMBALA

In News: The Supreme Court has upheld amendments made by Tamil Nadu, Karnataka and Maharashtra to the Prevention of Cruelty to Animals Act, 1960, to allow the traditional bull-taming sports of Jallikattu and Kambala, and bullock-cart racing.



More on the Topic

- SC has overruled its 2014 ruling in 'Welfare Board of India v. A. Nagaraja' and held that Jallikattu has a strong cultural component.
- SC ruled that the amendments, made in 2017 were "valid legislations".
- It added that the jallikattu issue was "debatable", and must ultimately be decided by the House of the People (Lok Sabha).
- Making this decision requires social and cultural analysis in greater detail, and such an exercise "cannot be undertaken by the

judiciary.

- The court also said that the 2017 amendment does not violate –
- Articles 51-A (g) and 51-A (h), which impose duties on Indian citizens to protect the environment and develop a scientific temper, humanism, spirit of inquiry, and reform, respectively.
- Articles 14 (Right to Equality) and 21 (Right to Life) of the Constitution.

About Jallikattu:

- Jallikattu, also known as eruthazhuvuthal, is a bull-taming sport traditionally played in Tamil Nadu as a part of the Pongal harvest festival.
- The festival is a celebration of nature, and thanksgiving for a bountiful harvest, of which cattle-worship is part.
- However, the practice of jallikattu has long been contested, with animal rights groups and the courts expressing concern over cruelty to animals and the bloody and dangerous nature of the sport that sometimes causes death and injuries to both the bulls and human participants.
- In the present case, the petitioners challenged the Tamil Nadu amendment that allowed jallikattu, contending that since the central law prohibits cruelty to animals, there could not be an amending Act that perpetuates cruelty.
- The plea also named states like Karnataka and Maharashtra as parties to the case, since they too have similar bull-related sports.

About Kambala:

- Kambala is an annual buffalo race held in the southwestern Indian state of Karnataka.
- Traditionally, it is sponsored by local Tuluva landlords and households in the coastal districts of Dakshina Kannada and Udupi of Karnataka and Kasaragod of Kerala, a region collectively known as Tulu Nadu.

COMPETITION COMMISSION OF INDIA

In News: Centre has appointed a new director of the Competition Commission of India.



More on the Topic:

- The goals of the Competition Act, 2002 are aimed at being accomplished through the establishment of the CCI, which was set up by the Central Government.
- It comes under the Ministry of Corporate Affairs.
- It should be noted that on the recommendations of Raghavan committee, the Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act) was repealed and replaced by the Competition Act, 2002.
- The Commission comprises a Chairperson and six Members who are appointed by the Central Government.
- It is the **statutory duty** of the Commission to eliminate practices having an adverse effect on competition, promote and sustain competition, protect the interests of consumers and ensure freedom of trade carried on by other participants, in markets in India as provided in the Preamble as well as **Section 18 of the Act**.

GOVERNMENT WIDENS AADHAAR AMBIT

In News: Widening the list of non-banking reporting entities, the Finance Ministry has allowed 22 financial entities to verify the identity of their customers via Aadhaar under the ambit of the money laundering law.

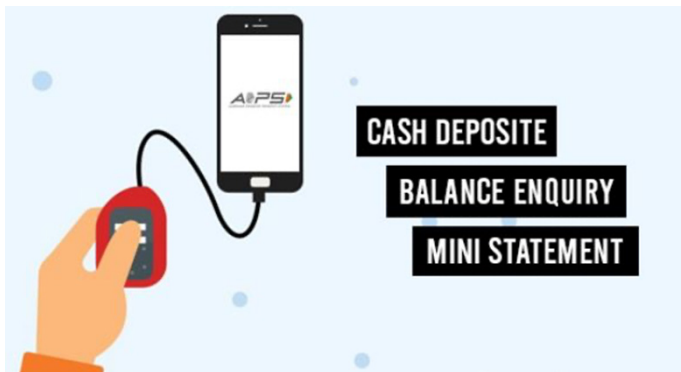


More on the Topic:

- These entities can access the Aadhaar authentication and e-KYC services of UIDAI through a **secure application programming interface (API)**, and use them for verifying their customers.
- According to MeitY, these entities have been selected based on their compliance with the Aadhaar Act, 2016 and the Information Technology Act, 2000, as well as their track record of providing quality services to customers.
- Recently, the Ministry of Electronics and IT (MeitY) proposed allowing a wide range of private entities to carry out Aadhaar authentication for a number of services, expanding the use of the digital identity beyond its ministries and departments.

GAPS IN AADHAAR-ENABLED PAYMENT SYSTEM (AePS)

In News: Cybercriminals are exploiting the gaps in the Aadhaar-enabled Payment System (AePS).



More on the Topic:

What is AePS and how does it remove the need for an OTP? salient features of NPRD, 2021 are:

- Aadhaar-enabled Payment Services (AePS) is a bank-led model which allows online financial transactions at Point-of-Sale (PoS) and Micro ATMs through the business correspondent of any bank using Aadhaar authentication.
- The model removes the need for OTPs, bank account details, and other financial details.
- It allows fund transfers using only the bank name, Aadhaar number, and fingerprint captured during Aadhaar enrolment, according to the National Payments Corporation of India (NCPI).

- For AePs, these are the only inputs required for certain types of transactions, including cash deposit, cash withdrawal, balance inquiry, mini statement, Aadhaar to Aadhaar fund transfer, authentication, and BHIM Aadhaar pay.

How do you secure Aadhaar biometric information?

- The UIDAI is proposing an amendment to the Aadhaar (Sharing of Information) Regulations, 2016, which will require entities in possession of an Aadhaar number to not share details unless the Aadhaar numbers have been redacted or blacked out through appropriate means, both in print and electronic form.
- The UIDAI has also implemented a **new two-factor authentication mechanism** that uses a machine-learning-based security system, combining finger minutiae and finger image capture to check the liveness of a fingerprint.
- Additionally, users are also advised to ensure that **they lock their Aadhaar information by visiting the UIDAI website or using the mobile app.**
- This will ensure that their biometric information, even if compromised, cannot be used to initiate financial transactions.
- Aadhaar can be unlocked when the need for biometric authentication arises, such as for property registration and passport renewals, after which it can again be locked.
- Aadhaar cards can be locked using the UIDAI website to generate a 16-digit VID number via SMS service.
- Users can also lock their Aadhaar biometric information using the My Aadhaar tab on the UIDAI website.

CENTRAL BUREAU OF INVESTIGATION (CBI)

In News: CBI director appointed recently.

More on the Topic:

- The Central Bureau of Investigation (CBI) is the premier investigating agency of India.
- Established in 1963 as a non-statutory body and governed by the Delhi Special Police Establishment (DSPE) Act, 1946.



- It operates under the jurisdiction of the Ministry of Personnel, Public Grievances and Pensions.
- Originally set up to investigate bribery and governmental corruption, in 1965 it received expanded jurisdiction to investigate breaches of central laws enforceable by the Government of India, multi-state organised crime, multi-agency or international cases.
- CBI is exempted from the provisions of the Right to Information Act.
- CBI is India's officially designated single point of contact for liaison with the Interpol.

Appointment of CBI Director:

- CBI director is selected by a high-level committee comprising the Prime Minister, the Chief Justice of India, and Leader of the opposition in Lok Sabha.
- CBI director is elected for a fixed tenure of two years, which can be extended up to five years.

INTERNAL COMPLAINTS COMMITTEE (ICC)

In News: The investigation in lights of National Prominent Wrestlers protest to take action on Sexual Harassment allegations has found that there was no Internal Complaints Committee (ICC) in Wrestling Foundation India, as mandated by law under the 2013 Prevention of Sexual Harassment (PoSH) Act.

More on the Topic:

- The ICC was designed to be the first port of call for any grievance under the PoSH Act, a key element needed to create a safe workplace environment for women.



- As per the law, it needs to have a minimum of four members – at least half of them women – of whom one shall be an external member, preferably from an NGO or an association that works for women's empowerment or a person familiar with issues related to sexual harassment, like a lawyer.
- In fact, a functional ICC is one of the key conditions set up by the Ministry of Sports to grant annual recognition to the federations.

What needs to be done?

- ICCs should be immediately constituted.
- The government should ensure that all organizations comply with the act and set up ICCs as per the guidelines.
- The government should provide legal aid and assistance to women who file complaints under the PoSH Act.
- Along with ICC there is a need to create awareness on Posh Act and importance and procedures of Posh act and ICC.
- As athletes and sports persons are not in formal office spaces there is a need to create awareness when they come for tournaments or through other mediums like digital media.

About PoSH Act:

- The Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, often known as the PoSH Act, was passed in 2013.
- The Act defines sexual harassment as any unwelcome act or behaviour (whether directly or by implication) such as;
- Physical contact and advances
- A demand or request for sexual favours
- Making sexually coloured remarks
- Showing pornography
- Any other unwelcome physical, verbal or non-verbal conduct of sexual nature.

- The Act provides a mechanism for the prevention, prohibition, and redressal of complaints of sexual harassment in the workplace.

Responsibilities of the Employer:

- To provide a safe working environment for women.
- Display the penal consequences of sexual harassment.
- Organize awareness programs and workshops.
- Assist the complainant if she chooses to file a criminal case against the respondent.

Investigations and Actions:

- The ICC or LCC is required to complete the inquiry into the complaint within 90 days and submit a report with its recommendations to the employer or district officer.
- The employer or district officer is required to take action on the recommendations of the
- ICC or LCC within 60 days and inform the complainant and respondent about it.
- The Act provides for penalties for false or malicious complaints, non-compliance with the provisions of the Act by the employer or ICC or LCC members, and victimization or retaliation against the complainant or witness.

THE SC/ST PREVENTION OF ATROCITIES ACT 1989

In News: The CB-CID police, probing the custodial torture charges in Tamil Nadu has registered cases invoking the provisions of The Scheduled Caste / Scheduled Tribes (Prevention of Atrocities) Act, 1989.

More on the Topic:

- The Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, also known as the SC/ST Prevention of Atrocities Act, is an Indian law enacted in 1989.
- The purpose of the law is to prevent discrimination, violence, and atrocities against individuals belonging to Scheduled Castes (SC) and Scheduled Tribes (ST) communities.
- These communities are recognized by the Indian Constitution as historically disadvantaged and subject to social and economic exclusion.

- The Act defines various offences against SC/ST individuals, including intentional insult, intimidation, and humiliation, and imposes strict punishments for these offences.

- The Act also provides for the establishment of special courts and special public prosecutors to handle cases under the Act, and it provides for the compensation and rehabilitation of victims.

Responsibilities of Administration:

- It imposes a duty on every public servant to take necessary steps to protect SCs and STs from any harm or harassment arising out of an offence under the Act.
- Failure to do so can result in imprisonment of up to six months or a fine or both.
- It imposes a duty on every public servant to register a complaint or information relating to an offence under the Act without any delay or discrimination.
- Failure to do so can result in imprisonment of up to one year or a fine or both.

About the Shimla Convention:

- The convention attempted to settle the question of Tibet's sovereignty and avoid further territorial disputes in the region.
- The treaty divided the Buddhist region into "Outer Tibet" and "Inner Tibet" – the former would "remain in the hands of the Tibetan Government at Lhasa under Chinese suzerainty", though China was not allowed to interfere in its affairs.
- The latter would be under the direct jurisdiction of the newly formed Republic of China.
- The latter of these newly decided boundaries would later be called the McMahon Line after McMahon, the chief British negotiator.
- Arguing that Tibet had no independent authority to enter into international agreements China did not sign the agreement.

Punishment:

- It prohibits anticipatory bail for any person accused of an offence under the Act unless there is no prima facie case against him or her.
- It prescribes a minimum sentence of 6 months imprisonment for any offence under the Act, which can extend up to life imprisonment or the death penalty in certain cases.

Challenges Implementing the Act:

- Lack of awareness and sensitivity among law enforcement officials and the judiciary about the Act's provisions and the issues faced by SC/ST communities.
- Lack of Awareness about the act among the SC/ST communities.
- The misuse of the Act by some individuals to falsely implicate innocent persons, leading to backlash against the Act and calls for its amendment.
- The inadequate allocation of resources and infrastructure for the effective implementation of the Act, including the establishment of special courts and the appointment of public prosecutors. The conviction rate under the Act is very low compared to other criminal cases.
- The social and economic marginalization of SC/ST communities, which makes them vulnerable to violence and discrimination.
- The resistance of dominant caste groups to the implementation of the Act, leading to a lack of political will to enforce its provisions.

Way Ahead:

- Improving the awareness among the communities and the officials.
- Adequate allocation of the resources.
- Addressing the social and economic marginalization of SC/ST communities through affirmative action policies, such as effective utilisation of reservations in education and employment.
- Encouraging political will and public support for the implementation of the Act by creating awareness about the issues faced by SC/ST communities and the importance of protecting their rights and dignity.

INDIAN NUCLEAR LIABILITY LAW

In News: The issues regarding India's nuclear liability law continue to hold up the more than a decade-old plan to build six nuclear power reactors in Maharashtra's Jaitapur, the world's biggest nuclear power generation site under consideration at present.



More on the Topic:

- Laws on civil nuclear liability ensure that compensation is available to the victims for nuclear damage caused by a nuclear incident or disaster and set out who will be liable for those damages.
- The international nuclear liability regime consists of multiple treaties and was strengthened after the 1986 Chernobyl nuclear accident.
- The umbrella Convention on Supplementary Compensation (CSC) was adopted in 1997 with the aim of establishing a minimum national compensation amount.
- The amount can further be increased through public funds, (to be made available by the contracting parties), should the national amount be insufficient to compensate for the damage caused by a nuclear incident.

India and Enacting of civil nuclear liability Law:

- Even though India was a signatory to the CSC, Parliament ratified the convention only in 2016.
- To keep in line with the international convention, India enacted the Civil Liability for Nuclear Damage Act (CLNDA) in 2010, to put in place a speedy compensation mechanism for victims of a nuclear accident.
- The CLNDA provides for strict and no-fault liability on the operator of the nuclear plant, where it will be held liable for damage regardless of any fault on its part.
- The Act also specifies the limitations on the amount and time when action for compensation can be brought against the operator.
- India currently has 22 nuclear reactors with over a dozen more projects planned. All the existing reactors are operated by the state-owned Nuclear Power Corporation of

India Limited (NPCIL).

What does the CLNDA say on supplier liability?

- CSC is based on the principle of **exclusive liability of the operator of a nuclear installation and no other person**. It lays down conditions under which national laws can extract liability from the supplier.
- One, if it is expressly agreed upon in the contract or two, if the nuclear incident "results from an act or omission done with intent to cause damage".
- However, India, going beyond these conditions, introduced the concept of supplier liability over and above that of the operator's in CLNDA.
- This has made suppliers of nuclear equipment wary of operationalising nuclear deals with India.
- The architects of the law recognised that defective parts were partly responsible for historical incidents such as the Bhopal gas tragedy in 1984 and added the clause on supplier liability.

Why is the supplier liability clause an issue in nuclear deals?

- Concerns about potentially getting exposed to unlimited liability under the CLNDA and ambiguity over how much insurance to set aside in case of damage claims have been sticking points for suppliers.

TRIPLE TESTS FOR SURROGACY

In News: Karnataka High Court has set a test with three conditions to check the eligibility of surrogacy.



Who can opt for surrogacy?

- Indian citizens who have been married for at least five years
- Woman should be aged 23-50 and the man, 26-55 years
- Couple shouldn't have any surviving child (biological, adopted or surrogate), except one who is mentally or physically challenged or suffers from a life-threatening disorder or fatal illness.

Who can be a surrogate mother?

- A close relative of the couple
- A married woman with a child of her own, aged 25-35
- She can be a surrogate mother only once in her lifetime
- Should be certified as medically and psychologically fit

More on the Topic:

- The proposed triple test includes a genetic test, a physical test, and an economic test.
- The genetic test is being conducted to confirm whether the embryo could be genetically healthy in the context of sperm and egg cells which would contribute genetic material to it.
- The physical test will check if the couple is physically able to raise the child.
- The economic test is being done to verify if the prospective parents are economically sound so as to not put the child in financial difficulty.

DEFAULT BAIL

In News: The Supreme Court held that the relief of statutory bail under Section 167(2) of the Criminal Procedure Code, is a fundamental right under Article 21.



More on the Topic:

- According to section 167 of the Criminal Procedure Code (CrPC), an accused will be entitled to default bail if the investigating agency fails to file a charge sheet within 60 days from the date of remand.
- For certain categories of offences, the stipulated period can be extended till 90 days.

GOVERNMENT SCHEMES

ASSISTANCE TO MEDICAL DEVICE CLUSTERS FOR COMMON FACILITIES (AMD-CF)

In News: Ministry of Chemicals & Fertilisers, Government of India, has announced the scheme for "Assistance to Medical Device Clusters for Common Facilities (AMD-CF)".



More on the Topic:

- This scheme aims to strengthen Medical Device clusters by providing financial assistance and to strengthen and / or establish more testing laboratories for Medical Devices to improve quality and sustainable growth.
- The Scheme will be implemented under the Department of Pharmaceuticals, Ministry of Chemicals & Fertilizers.
- For Common Infrastructure Facilities (CIF) for the Medical Device (MD) clusters, the limit of support will be 70% of the approved project cost or Rs 20 crore, whichever is less, as per the approval of the Scheme Steering Committee (SSC).
- In the case of Himalayan States and States in the NorthEast Region, the grant-in-aid would be Rs 20 crore per cluster or 90% of the project cost of the CIF, whichever is less.
- While Medical Devices Parks as planned clusters with shared common manufacturing & testing or warehousing & clearing facilities were being encouraged to help reduce the CAPEX (capital expenditure) of manufacturers.

About Indian Pharma Industry:

- India is a major exporter of Pharmaceuticals, with over 200+ countries served by Indian Pharma exports.

- The pharmaceutical industry in India is expected to reach \$65 Bn by 2024 and to \$130 Bn by 2030. The pharmaceutical industry in India is currently valued at \$50 Bn.
- The Indian industry is currently 4th largest Asian medical devices market after Japan, China and South Korea.
- However, it has a significant presence of several multinational companies with about 75-80% of the sales generated from imported Medical Devices.

START PROGRAM

In News: ISRO has launched a new introductory -level online training programme called 'Space Science and Technology Awareness Training (START)' aimed at post-graduate and final-year undergraduate students of physical sciences and technology.



More on the Topic:

- The programme will cover various domains of space science, including Astronomy & Astrophysics, Heliophysics & Sun-Earth interaction, Instrumentation, and Aeronomy. It will be delivered by the scientists from Indian academia and ISRO centres.
- The START programme is part of ISRO's efforts to enable Indian students to become professionals in space science and technology, as the organization's space science exploration program continues to expand into new domains.

DECENTRALISED CLEAN ENERGY TECHNOLOGY

In News: Report published jointly by Council on Energy, Environment and Water (CEEW) and Villgro Innovations Foundation has stated that Technologies that are powered by decentralised renewable energy (DRE) could potentially impact 37 million livelihoods in India's agriculture and textile sectors.

More on the Topic:

- DRE technologies include solar-run textile manufacturing units, biomass-powered cold solar storages and micro solar pumps, among several others.
- DRE has a market potential of Rs 4 lakh crore in rural and peri-urban communities in India.
- Currently, India has 12 mature technologies powered by DRE.
- These are the higher capacity irrigation pumps as well as the micro pumps, silk reeling machines, dryers, charkhas, small horticulture processors, small refrigerators/deep freezers, cold storages, vertical fodder growing units, grain milling machines, looms and bulk milk chillers.
- Together, they collectively have the potential to impact 37 million livelihoods.

States and Adoption of DRE:

- Uttar Pradesh leads in terms of estimated future adoption of solar-powered technologies, followed by West Bengal, Bihar, Gujarat, Maharashtra, Madhya Pradesh and Karnataka.

About Decentralised Clean Energy Technology:

- DRE is a system that uses renewable energy to generate, store and distribute power in a localised way.
- Energy that is generated close to where it will be used and typically uses renewable energy sources.

SMART CITIES MISSION

In News: The Union Housing and Urban Affairs Ministry has extended for the second time the Smart Cities Mission (SCM) by a year till June 2024 as several cities are yet to complete their projects.

More on the Topic

- The Smart Cities Mission was launched by the Prime Minister on June 25, 2015.
- A total of 100 cities were selected in rounds from 2016 to 2018 and were supposed to complete their projects within five years of their selection.
- The SCM was extended in 2021 until June 30, 2023, on account of the delay in the completion of the projects due to the pandemic.

Objective:

- The objective of the smart city initiative is to promote sustainable and inclusive cities that provide core infrastructure to give a decent quality of life, a clean and sustainable environment through application of some smart solutions such as data-driven traffic management, intelligent lighting systems, etc.
- The focus is on **sustainable and inclusive development** and the idea is to look at compact areas, create a replicable model to serve as a beacon to other aspiring cities.
- The core infrastructure elements in a Smart City are as follows:
 - Adequate water supply
 - Assured electricity supply
 - Sanitation including solid waste management
 - Efficient urban mobility and public transport
 - Affordable housing, especially for the poor
 - Robust IT connectivity and digitalisation
 - Good governance, especially e-governance and citizen participation
 - Sustainable environment
 - Safety and security of citizens, particularly women, children and the elderly
 - Health and education

Financial Allocation:

- According to the SCM guidelines, the central government will provide financial support to the extent of Rs 48,000 crore over five years, on an average Rs 100 crore per city per year.
- An equal amount on a matching basis will be contributed by the state government or urban local body.

Challenges:

- Smart cities function as **special purpose vehicles** diverged from regular urban governance structures.
- It can create **islands of development** rather than an inclusive all round development of the city.
- Although India's Smart Cities Mission has identified more than 20 priority areas, **interventions by the respective agencies are weak.**

- There is an inadequate emphasis on the functioning of urban local bodies.
- The Area Based Development approach – development of a sewage system somewhere or a web of roads in another city – will cover just about three % of the urban areas associated with these smart cities.
- Urban local bodies lack both technical and human capacity and professionalism.

THE MAHILA SAMMAN SAVINGS CERTIFICATE (MSSC)

In News: Prime Minister has urged women to enroll for Mahila Samman Saving Certificate (MSSC).

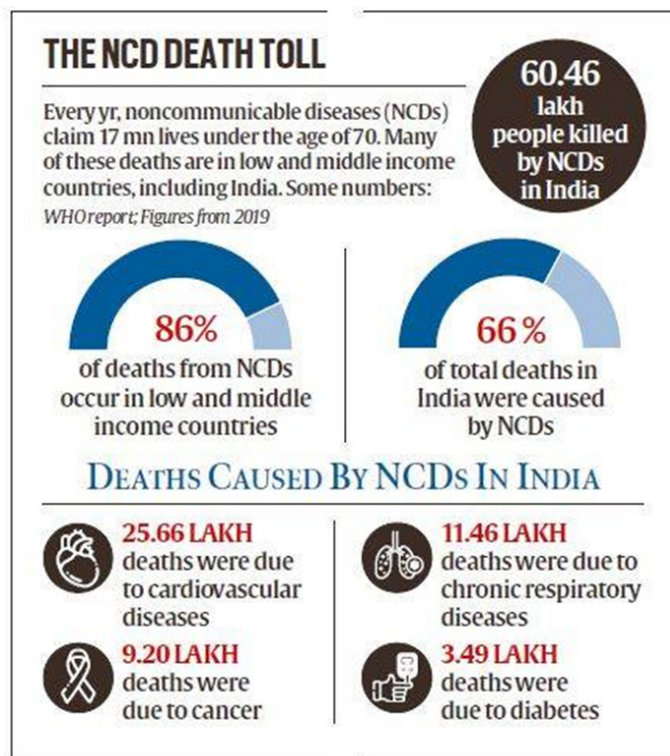


More on the Topic:

- The two-year tenure scheme will offer an interest rate of 7.5% compounded quarterly with flexible investment and partial withdrawal options with a maximum ceiling of Rs.2 lakh.
- The scheme is valid for a two-year period up to March 2025.
- The minimum amount to be deposited is 1000 rupees, while the maximum is 2 lakhs rupees. However, an individual may open an unlimited number of accounts, subject to the maximum deposit limit, and a three-month period must elapse between the opening of one account and the opening of another.
- The MSSC scheme was announced in the 2023-24 Union Budget by the Finance Minister and is a step towards financial inclusion and empowerment of women.
- The scheme is backed by the Union Government, and thus, there is no credit risk involved.

NATIONAL PROGRAMME FOR PREVENTION & CONTROL OF NON COMMUNICABLE DISEASES

In News: The existing National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) programme has been renamed National Programme for Prevention & Control of Non-Communicable Diseases (NP-NCD) amid widening coverage and expansion.



More on the Topic:

- The addition of many new diseases or disease-groups and new health initiatives have prompted the Central government to widen and rename its programme for control and prevention of non-communicable diseases (NCDs).
- The Ministry of Health and Family Welfare (MoHFW) has also decided to rename the portal which enables population enumeration, risk assessment, and screening for five common NCDs, including hypertension, diabetes, and oral, breast and cervical cancers of the population aged above 30 years.
- NPCDCS is being implemented under the National Health Mission (NHM) across the country.
- Under NPCDCS, NCD Cells are being established at National, State and District levels for programme management, and NCD Clinics are being set up at District and Community

Health Centres (CHC) levels, to provide services for early diagnosis, treatment and follow-up for common NCDs.

India's NCD Burden:

- A study 'India: Health of the Nation's States - The India State-Level Disease Burden Initiative in 2017' by Indian Council of Medical Research (ICMR) estimated that the proportion of deaths due to NCDs in India have increased from 37.9% in 1990 to 61.8% in 2016.
- The four major NCDs are cardiovascular diseases (CVDs), cancers, chronic respiratory diseases (CRDs) and diabetes which share four behavioural risk factors – unhealthy diet, lack of physical activity, and use of tobacco and alcohol.

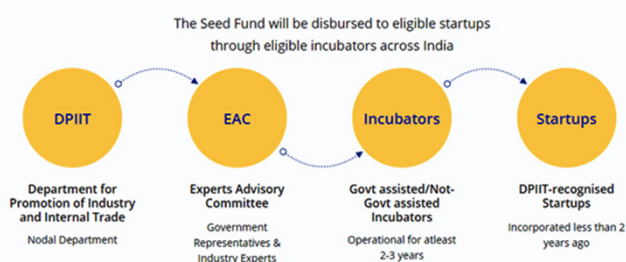
About Non Communicable Diseases:

- Noncommunicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioural factors.
- The main types of NCD are cardiovascular diseases (such as heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes.
- NCDs disproportionately affect people in low- and middle-income countries, where more than three quarters of global NCD deaths (31.4 million) occur.

STARTUP INDIA SEED FUND SCHEME

In News: The Department for Promotion of Industry and Internal Trade (DPIIT) is undertaking a third-party assessment of Startup India Seed Fund Scheme to see its impact on the ground.

How Startup India Seed Fund Will Operate



More on the Topic:

- SISFS was created by DPIIT, Ministry of Commerce and Industry in 2021.

- It aims to provide financial assistance to start-ups for proof of concept, prototype development, product trials, market entry, and commercialisation.
- The fund was divided into four years for providing seed funding to eligible startups through eligible incubators across India.
- The seed fund scheme is benefiting start-ups in different sectors, including healthcare, agriculture, education, IT services and auto.

About Seed Funding:

- Seed Funding is an early stage of investment in a start-up or a new business idea to help the company reach a point where it can secure additional rounds of funding or generate revenue to become self-sustaining.

UNIFIED LOGISTICS INTERFACE PLATFORM (ULIP)

In News: The Secretary of, the Ministry of Coal chaired a meeting on the integration of the Unified Logistics Interface Platform (ULIP) with the digital systems of the Ministry of Coal.



More on the Topic:

- Unified Logistics Interface Platform (ULIP) is a part of the National Logistics Policy (NLP).
- It was launched by Prime Minister Shri Narendra Modi on September 17, 2022.
- It is designed for enhancing efficiency and reducing the cost of logistics in India by creating a transparent, single-window platform to provide real-time information to all stakeholders.
- It was emphasized that the solution should have visibility of multi-modal transport and all the existing systems should be integrated with the ULIP system to create a National Single Window Logistics Portal.
- It will provide real-time monitoring of cargo movement and ensure the confidentiality of data with end-to-end encryption.

There are three key components of this platform namely

- Integration with existing data sources of ministries
- Data exchange with private players
- Unified document reference in the supply chain

PARAKH

In News: Education ministry and PARAKH has organised the first national level workshop on assessment.

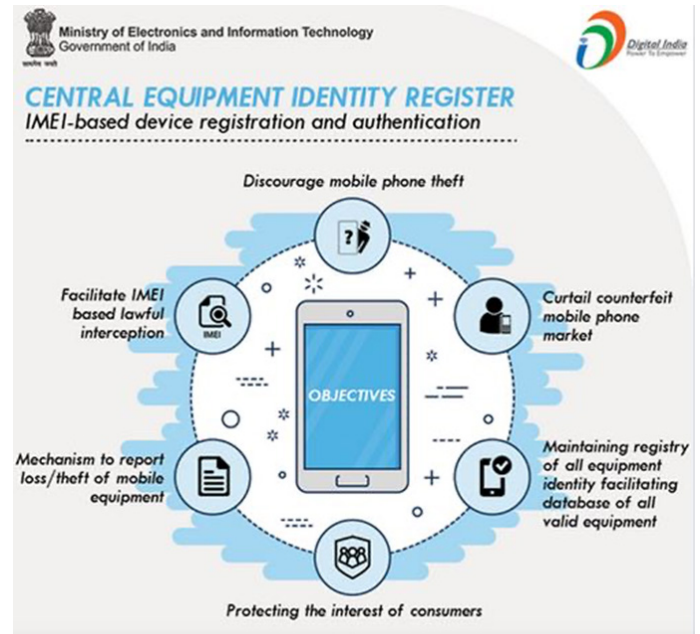


More on the Topic:

- The workshop was organised in New Delhi and focused on school assessment, examination practices and equality between educational boards nationwide.
- Parakh is an organisation under the **National Council of Research and Training (NCERT)**. This organisation aims to bring school boards from different states and UT together on a common platform.
- PARAKH has been launched as part of the implementation of the **National Education Policy (NEP)-2020** that envisaged a standard-setting body to advise school boards regarding new assessment patterns and latest research, and promote collaborations between them.
- It will also be tasked with holding periodic learning outcome tests like the **National Achievement Survey (NAS)** and **State Achievement Surveys**.
- It will work on three major assessment areas: large-scale assessments, school-based assessment, and examination reforms.

CENTRAL EQUIPMENT IDENTITY REGISTER (CEIR)

In News: GOI will launch CEIR to combat mobile phone theft, the Indian government is rolling out a tracking system that will enable people to block and track their lost or stolen mobile phones across the country.



More on the Topic:

- CEIR is the citizen centric portal of the **Department of Telecommunications**.
- The CEIR system, which is scheduled for pan-India launch will enable people to block and track their lost mobile phones.
- The system has been designed to discourage mobile phone theft and facilitate the tracing of lost or stolen mobiles to the police, detection of cloned or counterfeit mobiles, and restriction of the use of such cloned mobiles.
- Furthermore, the CEIR system will safeguard the interests of consumers by providing them with information related to fake and cloned mobile phones, thereby preventing them from falling prey to fraudulent activities.

BHARAT E MART

In News: India Post signed an MoU with CAIT and Tripta Technologies for operationalisation of a portal called 'Bharat E Mart'.

More on the Topic:

- It will provide the facility of pick-up of consignments from the premises of traders and will ensure delivery at the doorsteps of

the consignees across the country.

- Shortly, India Post will onboard itself on the Open Network for Digital Commerce (ONDC) platform, being developed by the Ministry of Commerce as a logistics service provider.



- Significance of the initiative lies in the fact that It would provide much needed logistics support to small traders which would increase their businesses and also the opportunities for employment.

CENTRE FOR PROCESSING ACCELERATED CORPORATE EXIT (C-PACE)

In News: The corporate affairs ministry has set up Centre for Processing Accelerated Corporate Exit (C-PACE) .



More on the Topic:

- It is to ensure timely and process-bound deregistering of companies from records as well as provide more meaningful data to the stakeholders.
- The centre is situated at the Indian Institute of Corporate Affairs (IICA) in Manesar,

Haryana.

- Several IT-based systems have been established for accelerated registration of new companies.
- The government has established C-PACE to facilitate the faster voluntary winding up of companies, reducing the current timeline of

two years to less than six months, to facilitate the quick and procedure-bound deletion of businesses from public records and to provide stakeholders with more usable data.

MERI LIFE APP

In News: The Ministry of Environment, Forest and Climate Change (MoEF&CC) has launched the "Meri LiFE" app.



More on the Topic:

- It is intended to enable citizens to save the environment by fostering a nationwide movement for LiFE.
- The Meri LiFE app will help in creating a structured way to track the progress being made on Mission LiFE.
- Upon successful sign-up, users will be guided to participate in a series of LiFE related tasks under the following 5 themes, namely, Save Energy, Save Water, Reduce Single Use Plastic, Adopt Sustainable Food Systems and Adopt Healthy Lifestyle.
- This app is inspired by the concept of LiFE.
- Mission LiFE (Lifestyle for Environment) was launched by The Prime Minister in 2022 at Kevadia, Gujarat and focuses on bringing about behaviour changes in individuals through simple easy to do actions.
- The Ministry of Environment, Forest and Climate Change is the nodal ministry for national-level coordination and implementation of Mission LiFE.

SANCHAR SAATHI PORTAL

In News: Through Sanchar Saathi Portal, people will be able to block, track and check the genuineness of a used device before buying them.



INDIAN ECONOMY

ASSET MANAGEMENT COMPANIES

In News: SEBI has proposed setting up of adequate surveillance and internal control systems by AMC's for deterrence of possible market abuse.



More on the Topic:

- The Sanchar Saathi portal was launched by the Department of Telecom.
- The Sanchar Saathi facilities have been developed by C-DoT. The technology development arm under the Department of Telecom has been able to add features to check use of cloned mobile phones across all telecom networks.
- The government has made it mandatory to disclose IMEI— a 15-digit unique numeric identifier of mobile devices before their sale in India.
- The mobile networks will have access to the list of approved IMEI numbers which will check the entry of any unauthorised mobile phones on their network.
- Telecom operators and CEIR system will have visibility into IMEI number of the device and mobile number linked to it and the information is being used in some states to track your lost or stolen mobiles through CEIR.
- One of the common practices is that miscreants after stealing mobile phones change IMEI number of the device which prevents tracking and blocking of such handsets.
- The CEIR will be able to block any cloned mobile phones on the network with the help of various databases.

More on the Topic:

- An asset management company (AMC) is a firm that invests pooled funds from clients, putting the capital to work through different investments including stocks, bonds, real estate, master limited partnerships, and more.
- Along with high-net-worth individual (HNWI) portfolios, AMC's manage hedge funds and pension plans, and—to better serve smaller investors—create pooled structures such as mutual funds, index funds, or exchange-traded funds (ETFs), which they can manage in a single centralized portfolio.

Regulatory Bodies of AMC:

- AMC performs under the supervision of the board of trustees. All the Asset Management Companies are governed by SEBI and AMFI.
- The Association of Mutual Funds in India (AMFI) is a statutory body formed by mutual fund companies.
- Banks being sponsors are governed by RBI as well along with SEBI and AMFI.
- Lastly, all the regulatory bodies SEBI, AMFI, and RBI are governed by RBI.

THE NATIONAL PRODUCTIVITY COUNCIL (NPC)

In News: The National Productivity Council (NPC) conducts seven major field studies under the Pradhan Mantri Matsya Sampada Yojana (PMMSY).



More on the Topic:

- NPC was established in 1958 as a registered society to promote productivity culture in India.
- It is an autonomous organisation under the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.
- It provides consultancy, training, research and evaluation services to various sectors of the economy, both public and private.
- It offers customized solutions to address the specific needs and challenges of its clients.

RBI DIVIDENDS TO GOVERNMENT

In News: The board of the Reserve Bank of India (RBI) approved a higher-than-expected dividend to the government in FY23 due to large dollar sales and low provisioning requirements.



More on the Topic:

- The RBI is obligated, as per Section 20 of the RBI Act 1934, to undertake receipts and payments for the Centre and conduct exchange, remittance, and other banking operations.
- Section 47 of the RBI Act requires the RBI to

make provisions for bad debts, depreciation in assets, staff contributions, superannuation funds, and other expenses provided by bankers. The remaining profits are then paid to the central government.

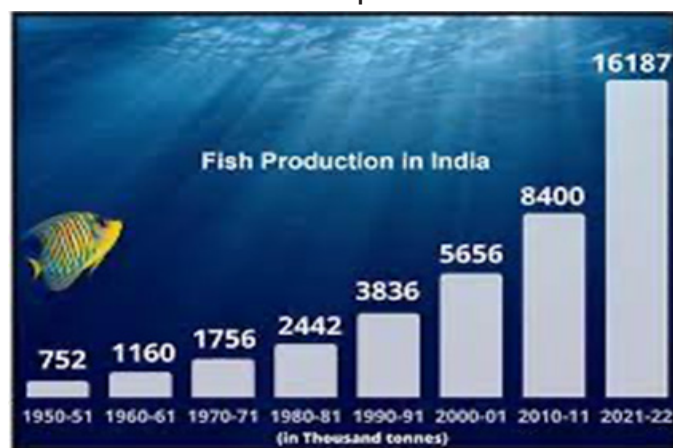
- The RBI pays dividends to the central government from the surplus income it earns on investments and valuation changes on its foreign exchange holdings, including dollar, and the fees it gets from printing currency notes. The dividends for fiscal 2022-23 will be paid in the current fiscal.

Major Sources of RBI Income:

- The RBI generates its profits primarily from interest earned through the sale and purchase of government securities, lending to banks, and interest on bond holdings through open market operations.
- The surplus profit is calculated by subtracting operating expenditures and other costs stipulated in Section 47 of the RBI Act. It can be understood as the residual income earned after subtracting the expenditure component from the RBI's balance sheet.

INDIAN FISHERIES SECTOR

In News: India's fish production touches a record 162.48 lakh tons per annum in 2021-22.



More on the Topic:

- From a mere 7.5 lakh tons in 1950-51, India's total fish production has reached a record 162.48 lakh tons per annum in 2021-22, with a 10.34% growth in fish production in 2021-22 in comparison to 2020-21.
- Today, India is the 3rd largest fish producing country with about 8% share in global fish production.
- It stands 2nd in aquaculture production and one of the top cultured shrimps producing

nations in the world.

- From mere 28.23 lakh tons per annum in 2000-01, the inland fish production stood at 121. 21 lakh tons per annum in 2021-22, a staggering 400% increase.

Government Initiatives that helped to Increase the Fish Production:

- **Pradhan Mantri Matsya Sampada Yojana:** The Pradhan Mantri Matsya Sampada Yojana. (PMMSY) is designed to address critical gaps in fish production and productivity, quality, technology, post-harvest infrastructure and management, modernisation and strengthening of value chain, traceability, establishing a robust fisheries management framework and fishers welfare.
- **Fisheries and Aquaculture Infrastructure Development Fund (FIDF):** It was launched in 2018 aims to augment the country's fish production to the level of about 20 million tonnes by 2022-23.
- The objectives of FIDF includes (i) Creation and modernization of capture & culture fisheries infrastructure, (ii) Creation of Marine Aquaculture Infrastructure, (iii) Creation and modernization of Inland Fisheries Infrastructure,
- (iv) Reduce post-harvest losses and improve domestic marketing facilities through infrastructure support, (v) To bridge the resource gap and facilitate completion of ongoing infrastructure projects.
- **Kisan Credit Card (KCC) Scheme:** Launched in 1998, Kisan Credit Card Yojana is a scheme that offers short-term, revolving credit to farmers across India.
- The scheme which was exclusive for conventional farming was further extended for the investment credit requirement of farmers viz. allied and non-farm activities in the year 2004. These include Animal Husbandry, Dairying & Fisheries Sector.
- **5 major fishing harbours – Kochi, Chennai, Visakhapatnam, Paradip, and Petuaghat** – will be developed as hubs of economic activity with world class infrastructure and amenities, Seamless and quality cold chain and Hygienic handling, reduce post-harvest losses for which around 600 crores would be spent.
- **Blue Revolution:** Blue Revolution, the Neel Kranti Mission has the vision to achieve

economic prosperity of the country and the fishers and fish farmers as well as contribute towards food and nutritional security through full potential utilization of water resources for fisheries development in a sustainable manner, keeping in view the bio-security and environmental concerns.

RBI WITHDREW RS. 2,000 NOTES

In News: The central bank has advised the public to deposit Rs 2000 banknotes, which were introduced after Rs 500 and Rs 1000 notes were withdrawn during the demonetisation exercise six years ago, into their bank accounts and / or exchange them into banknotes of other denominations at any bank branch.



More on the Topic:

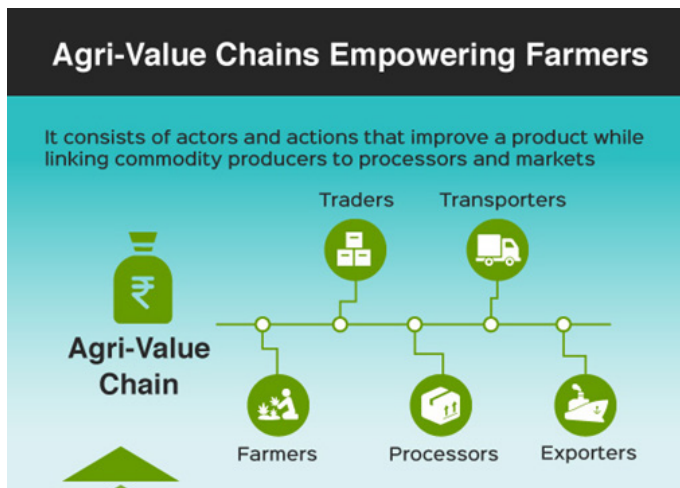
- The Rs 2000 note was introduced in November 2016 under Section 24(1) of The RBI Act, 1934, primarily with the objective of meeting the currency requirement of the economy expeditiously after the legal tender status of Rs 500 and Rs 1000 notes was withdrawn.
- With the fulfillment of that objective, and once notes of other denominations were available in adequate quantities, the printing of Rs 2000 notes was stopped in 2018-19.
- The RBI issued the majority of the Rs 2000 denomination notes prior to March 2017; these notes are now at the end of their estimated lifespan of 4-5 years.
- This denomination is no longer commonly used for transactions; besides, there is adequate stock of banknotes in other denominations to meet currency requirements.
- In view of the above, and in pursuance of the 'Clean Note Policy' of the Reserve Bank of India, it has been decided to withdraw the Rs 2000 denomination banknotes from circulation.

Clean Note Policy?

- The Clean Note Policy seeks to give the public good-quality currency notes and coins with better security features, while soiled notes are withdrawn out of circulation.

MAKING AGRI COMMODITY VALUE CHAINS SUSTAINABLE

In News: It is important to make the Agri value chain sustainable in India.



More on the Topic:

What is Agri-commodity value chains:

- Agri-commodity value chains refer to the entire process of production, processing, distribution, and consumption of agricultural commodities, from farm to fork.
- "Making Agri-commodity value chains sustainable" means the practice of ensuring that the agricultural value chain minimizes negative environmental and social impacts while promoting long-term economic viability.
- Making agri-commodity value chains sustainable is essential to protect the environment, ensure long-term agricultural productivity, meet consumer demands, address global sustainability challenges, promote stakeholder accountability, and adapt to the impacts of climate change.
- Ensuring that an agricultural commodity value chain is environmentally sustainable is a multi-dimensional challenge.
- Four dimensions in particular vex efforts to mitigate its environmental impact while benefiting farmers, processors, retailers, etc.

First, market and producer characteristics:

- It determines where responsible and effec-

tive practices can be implemented to have the greatest impact.

- For example, the expansion of cold-storage facilities to make export-oriented commodities more competitive in global markets is expected to increase energy demand.
- Estimating how this energy need will be met – through fossil fuels or renewables – is likely to determine the emissions associated with that commodity.

Second, the nature of production:

- It significantly determines the nature of intervention.
- The public attention on millets, through the declaration of the 'International Year of Millets', has helped widen demand across Indian and international consumers.
- Regionally, some efforts have led to climate, biodiversity, and livelihood benefits while helping preserve our ecological heritage in production landscapes.
- For example, evidence suggests that the introduction of biodiversity-friendly coffee in Karnataka has mitigated human-animal conflicts in the region to a significant extent.

Third, strong governance mechanisms and policies:

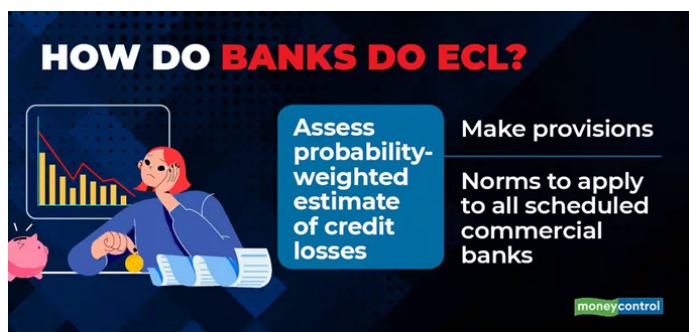
- They support value chains, either by providing subsidies, market access, and infrastructural support in terms of extension, processing, and storage facilities – or by a combination of several such aspects.
- Repurposing such support to improve production, sourcing, and consumption by targeting healthy and natural solutions can help have transformational impacts in commodity value chains.
- Example: national guidelines on responsible business urge organisations to encourage and support their suppliers, distributors, partners, and other stakeholders to adopt sustainable practices.

Fourth, Attention to the Dependants:

- No initiative to mitigate the environmental effects of agricultural value chains can be complete without benefiting the large number of people that depend on these value chains for sustenance.

ECL-BASED LOAN LOSS PROVISIONING NORMS

In News: Lenders have sought a one-year extension from the Reserve Bank of India (RBI) for implementation of the Expected Credit Loss (ECL)-based loan loss provisioning framework.



More on the Topic:

- The Reserve Bank of India has proposed a new framework for loan loss provisioning that requires banks to estimate expected credit losses based on forward-looking estimations.
- This shift moves away from the current method where loss provisions are made after a default.

About ECL:

- ECL is a method to assess and estimate losses on credit given by a bank before an asset turns bad.
- Under the ECL norms, banks will be required to classify financial assets (primarily loans, including irrevocable loan commitments, and investments classified as held-to-maturity or available-for-sale) into one of the three categories – Stage 1, Stage 2, and Stage 3, depending upon the assessed credit losses on them, at the time of initial recognition as well as on each subsequent reporting date and make necessary provisions.
- **Stage 1:** Financial assets that have not had a significant increase in credit risk or with low credit risk at reporting date.
- **Stage 2:** Financial instruments that have had a significant increase in credit risk but that don't have objective evidence of impairment.
- **Stage 3:** Financial assets that have objective evidence of impairment at reporting date.
- The RBI also proposed to introduce a transitional arrangement for introduction of ECL norms in order to avoid a capital shock.

REGIONAL RURAL BANK

In News: Review meeting of financial performance of Regional Rural Banks (RRBs) was conducted recently.



More on the Topic:

- Regional Rural banks are set up in the rural areas with the **special purpose of funding agricultural and other activities in the rural areas**. They give loans to small and marginal farmers, agricultural labourers and rural artisans.
- Their loans are structured to meet the needs of their customers and they charge rates of interest which are monitored by the Reserve Bank of India, our country's central bank.
- While such banks do keep a small profit as a motive while giving loans, they aim to give out as many loans as possible to deserving borrowers, i.e. those who are likely to be able to repay.
- Some RRBs and Local Area Banks also help their customers to conduct studies on the best way to utilise the funds that they borrow so that both the bank and the borrower benefit.
- RRBs are regulated by RBI and supervised by NABARD.
- RRBs' capital is contributed by the Government of India, State Government and Sponsor Bank in the proportion of 50:35:15.

CVV-LESS PAYMENTS

In News: The National Payments Corporation of India (NPCI) - RuPay has now introduced the CVV (Card Verification Value) free payment experience for its debit, credit and prepaid cardholders who have tokenised their cards on the merchant application or web page.



More on the Topic:

- This new CVV-less experience ensures that the cardholder will not have to reach out to their wallet or remember any card details, if they have saved (tokenised) their card on the e-commerce merchant which supports this feature.
- Tokenisation is a simple technology to secure card transactions without sharing the clear or real card details with the merchants.
- When a cardholder opts to save their card for a domestic e-commerce transaction, they authenticate the transaction through the card details (Card number, CVV, Card expiry date) as a one time activity followed by entering the OTP (two-factor authentication), the details are then Tokenised and saved with the merchant.

Card Verification Value (CVV):

- CVV - Card Verification Value (CVV) is a three or four-digit number located on the back of a physical debit or credit card.
- It is used as an additional security measure to ensure that the person making the transaction is a legitimate cardholder.

RBI GOLD RESERVE

In News: The Reserve Bank of India's (RBI) gold reserves touched 794.64 metric tonnes in fiscal 2023, an increase of nearly 5 % over fiscal 2022.

More on the Topic:

- Gold reserves are the gold held by a national central bank.
- It used to act as a guarantee to redeem promises to pay depositors, note holders/

paper money/trading peers, during the era of the gold standard – a monetary system (until 1971) in which the standard economic unit of account is based on a fixed quantity of gold.

- Currently gold acts as a store of value/ to support the value of the national currency.



Significance of Gold Reserves:

- Central banks want security, safety, liquidity and return. Gold is a safe asset to have as it is liquid, has an international price which is transparent, and as it can be traded anytime.
- Gold is a good hedge during times of uncertainty and economic turmoil, so every major central bank keeps some of its reserves in gold.
- The RBI added 7 tonnes of gold in January -March 2023.
- Experts believe that the RBI has been stepping up its gold purchases over the last few years in order to diversify its overall reserves.
- This change in strategy, according to experts, has been driven by negative interest rates in the past, the weakening of the dollar and growing geopolitical uncertainty.
- The gold is considered a more safe, secure, and liquid asset, to safeguard its returns amid global uncertainty and a rising inflation scenario.

Importance of gold in the economy:

- For most of the 20th century, gold served as the world's reserve currency.
- The United States used the gold standard until 1971. They were required to have equivalent reserves of gold to back up the paper money. Due to the volatility of the US dollar and other currencies, some economists believe that we should return to the gold standard even though it has been discontinued.
- Due to its inherent value and limited supply, inflationary periods see an increase in demand

for gold. Gold is able to keep its value much longer than other forms of currency because it cannot be diluted.

- The value of a nation's currency will decrease when that nation imports more than it exports. A country that is a net exporter, on the other hand, will see an increase in the value of its currency.
- As this raises the value of the country's total exports, a nation that exports gold or has access to gold reserves will see an increase in the strength of its currency when gold prices rise.
- Since the central banks depend on printing more cash to purchase gold, they create an excess supply of the currency. This increases the supply and thereby reduces the value of the currency used to buy it.

TRANSITION BONDS

In News: SEBI mandated additional requirements for issuance and listing of transition bonds to facilitate transparency and informed decision-making.



More on the Topic:

- Aptly named green bonds usually provide a source of direct finance for pre-identified environmentally friendly projects., like solar power farms or sustainable waste management facilities. A company's total environmental profile and commitment to reducing its carbon footprint is often assessed before it is eligible for funding.
- Blue bonds are a subset of green bonds and provide financing for projects related to ocean conservation, for example, renewable energy infrastructure like offshore wind farms or sustainable marine and fisheries projects.
- Sustainability-linked bonds are connected to long-term sustainability goals. Funds from these bonds can be used for any project,

provided certain sustainability improvements are met — such as reducing emissions by a set amount within a predetermined deadline.

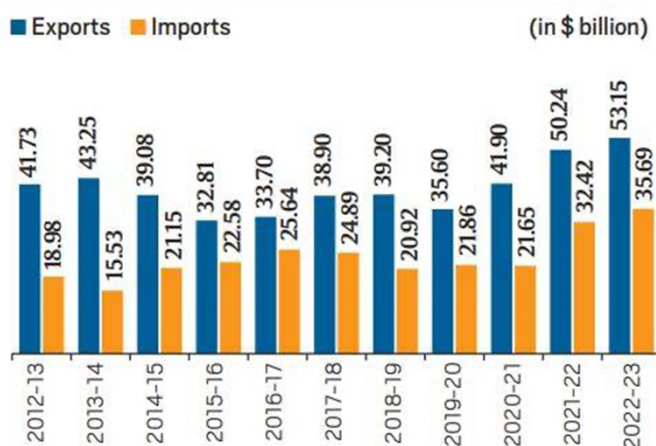
- Transition bond is a class of debt instruments.
- Transition bonds sit somewhere in between green and sustainability-linked bonds. Like green bonds, the finance they provide is directed at a specific project.
- But, as with sustainability-linked bonds, the bond issuer isn't required to already be operating sustainably but is usually in the process of transitioning to lower-carbon operations — such as a fossil fuel project aiming to reduce its emissions.

INDIAN FARM EXPORTS

In News: Both agricultural exports from and imports into India have scaled new highs in the fiscal year that ended March 31, 2023.

CHART

INDIA'S AGRICULTURAL TRADE



More on the Topic

- Between 2013-14 and 2015-16, exports sharply fell from \$43.25 billion to \$32.81 billion. The basic driver was global prices.

India's Major export contributors:

- India's agri exports have, in recent times, been powered by three items: Marine products, rice and sugar.
- Marine product exports have grown steadily from 2013-14 to 2022-23.
- Rice exports have also gone up during this period.
- But it's been driven by non-basmati rice with the value of premium-priced basmati shipments actually declining.

- Basmati exports are mainly to the Persian Gulf countries and, to some extent, the US and UK.
- Non-basmati shipments are more diversified, with the destinations spread across Asia (Bangladesh, China, Sri Lanka, Malaysia, Vietnam, UAE and Iraq) and Africa (from Senegal, Ivory Coast and Benin to Somalia and Madagascar).
- It's non-basmati that has made India the biggest rice exporter, ahead of Thailand.
- The boom in sugar exports has been more recent from a less quantity in 2017-18 to a higher quantity in 2022-23.
- Indian mills have built markets for both raw sugar (among refineries in Bangladesh, Indonesia, Malaysia, Saudi Arabia and Iraq) and regular plantation whites (in African countries, Afghanistan, Sri Lanka and China).
- The country has, in the process, emerged as the world's No. 2 exporter after Brazil.

Stagnant and Reduced Exports:

- Two items whose exports had registered substantial increases, only to falter in the last few years, are spices and buffalo meat.
- Spices exports are stagnant for since 2020-2021.
- **Raw Cotton and Oil Meals:** The drop has been even more for raw cotton, guar-gum and oil meals((a thickening agent used in extraction of shale oil and gas).
- Cultivation of genetically-modified Bt cotton and high global prices had enabled India to become the world's top producer (ahead of China) and No. 2 exporter (after the US) of the natural fiber. But with the yield gains from Bt tapering off and the regulatory regime not permitting new gene technologies, the country has turned from a net exporter to an importer of cotton.

India's Agriculture Imports:

- India's imports of farm produce are dominated by a handful of items.
- The most significant is vegetable oils, whose imports have more than doubled in value terms, from 2019-20 and 2022-23.
- In quantity terms, imports have risen from 13.18 million tonnes (mt) in the 2019-20 oil year (November-October) to 14.03 mt in 2021-22.

- Imports meet roughly 60% of India's vegetable oil requirements.
- Import dependence is hardly 10% now in pulses, with the value of imports also coming down.
- On the other hand, imports of spices, cashew and cotton – commodities where India has traditionally been a net exporter – have shown a rising trend.
- Spice imports going up are a reflection of reduced price competitiveness (vis-à-vis Vietnam in pepper and Guatemala in pepper), while an outcome of stagnant, if not falling, domestic production in cotton.

CURRENCY AND FINANCE FOR THE YEAR 2022-23

In News: RBI has released a report on Currency and Finance (RCF) for the year 2022-23. The report's theme is "Towards a Greener Cleaner India".



More on the Topic:

- The report covers four major dimensions of climate change to assess future challenges to sustainable high growth in India, viz., the unprecedented scale and pace of climate change; its macroeconomic effects; implications for financial stability; and policy options to mitigate climate risks.
- **Green Financing and Net Zero Target:** India's green financing requirement is estimated to be at least 2.5 % of gross domestic product (GDP) annually till 2030.
- For India to further achieve its net zero target by 2070, the country would require an accelerated reduction in the energy intensity of GDP by around 5% annually and a significant improvement in its energy mix in favour of renewables to around 80 % by 2070-71.
- There is a need for a balanced policy intervention with progress ensured across

all policy levers for India to achieve its green transition targets by 2030 and later make the net zero goal by 2070 attainable.

- **Implications for Financial Stability:** The financial sector faces the dual challenge of recalibrating its operations and business strategies to support the green transition process while also strengthening resilience to rising vulnerability to adverse climate events so as to safeguard financial stability.
- On the first challenge, estimates suggest that the green financing requirement in India could be at least 2.5% of GDP annually to address the infrastructure gap caused by climate events.
- On the second challenge, the results of a climate stress-test reveal that public sector banks may be more vulnerable than private sector banks in India.

Recommendations:

- **Introduce New Climate Finance related Fiscal Policies:** Carbon pricing using carbon taxes, Emission Trading System; green taxonomy to identify sustainable green assets and activities etc.
- **Investment in Climate Technologies:** Targeted R&D investments by Governments; addressing variability in wind and solar power supply, developing an indigenous renewables supply chain etc
- Boost climate-resilient agriculture

MINIMUM IMPORT PRICE

In News: Centre has fixed Minimum Import Price (MIP) for apples.



More on the Topic:

- MIP is a temporary measure to provide protection to domestic industry from

predatory pricing of imports. Below this price, import of the commodity is not allowed.

- **Directorate General of Foreign Trade (DGFT)** is an arm of the commerce ministry which frames rules related to exports and imports.

Why the MIP has been invoked for Apples:

- Jammu and Kashmir have been a prominent hub for apple cultivation for many decades. Despite the region's success in apple production, local growers have faced numerous challenges in recent years due to the influx of tax-free apples from foreign countries.
- This unfair competition has adversely affected their livelihoods. The absence of import taxes on foreign apples created an uneven playing field for J&K apple growers, who had to bear additional expenses such as transportation, packaging, and cold storage.
- As a result, their profits declined, making it increasingly difficult to compete with the imported produce flooding the market at lower prices.
- Recognizing the plight of J&K apple growers and the need to protect their interests, the central government has taken a proactive step by introducing the Minimum Import Price (MIP) for apples.

ELECTORAL BONDS

In News: According to State Bank of India data accessed under the Right to Information Act five cities, Mumbai, Kolkata, Hyderabad, New Delhi and Chennai, accounted for nearly 90% of all electoral bonds sold so far.

Electoral Bonds Scheme Notified


To help cleanse the political funding system in the country

Nature

- Bearer instrument in the nature of a Promissory Note
- Interest free banking instrument

Eligibility

- A citizen of India or a body incorporated in India
- On fulfillment of all the extant KYC norms
- By making payment from a bank account



Value

- Issued/ Purchased in multiples of Rs.1,000, Rs.10,000, Rs.1,00,000, Rs.10,00,000 and Rs.1,00,00,000
- Available from the Specified Branches of the State Bank of India (SBI)

Lifespan

- Shelf life of only 15 days
- Can be used for making donation only to the political parties registered u/s 29A of the Representation of the Peoples Act, 1951

Period of Purchase

- Available for purchase for a period of 10 days each in the months of January, April, July and October, as may be specified by the Government

More on the Topic

- Electoral bonds are an instrument through which anyone can donate money to political parties.

- Such bonds, which are sold in multiples of Rs 1,000, Rs 10,000, Rs 1 lakh, Rs 10 lakh, and Rs 1 crore, can be bought from authorised branches of the State Bank of India.
- As such, a donor is required to pay the amount — say Rs 10 lakh — via a cheque or a digital mechanism (cash is not allowed) to the authorised SBI branch.
- The donor can then give this bond (just one, if the denomination chosen is Rs 10 lakh, or 10, if the denomination is Rs 1 lakh) to the party or parties of their choice.
- The political parties can choose to encash such bonds within 15 days of receiving them and fund their electoral expenses.
- On the face of it, the process ensures that the name of the donor remains anonymous.

Eligibility:

- **Registered political parties that secured at least on 1% of votes polled in the most recent General or Assembly elections.**
- Buyers of bonds submit full KYC details at the time of buying. But the beneficiary political party is not required to reveal the identity of the entity that has given it the bond(s).

Criticisms Faced by Electoral Bond:

- The fact that such bonds are sold via a government-owned bank (SBI) leaves the door open for **the government to know exactly who is funding its opponents.**
- This may allow the possibility for the government of the day to either extort money, especially from the big companies, or victimize them for not funding the ruling party.
- Anonymous donation may compromise with the principle of free and fair election.
- Allowed possibility of corporate misuse as it removes limits and disclosure requirements on Company donations to Political Parties.

GREEN ENERGY OPEN ACCESS RULES

In News: Union Power & NRE Minister chaired a meeting with Industry and other stakeholders in New Delhi today on Green Energy Open Access Rules.

More on the Topic:

- In order to further accelerate our ambitious renewable energy programmes, with the end

goal of ensuring access to affordable, reliable, sustainable and green energy for all, Green Open Access Rules, 2022 have been notified in June, 2022.

- These rules are notified for **promoting generation, purchase and consumption of green energy including the energy from Waste-to-Energy plants.**
- The notified Rules enable simplified procedure for the open access to green power. It will enable **faster approval of Green OA, Uniform Banking, Voluntary purchase of RE power by commercial & industrial consumers, Applicability of OA charges etc.**
- Commercial and Industrial consumers are allowed to purchase green power on a voluntarily basis.
- Captive Consumers can take power under Green Open Access with no minimum limitation.
- Discom Consumers can demand for supply of Green power to them.

Salient features of the Rule:

- Green Open access is allowed to any consumer and the limit of Open Access Transaction has been reduced from 1 MW to 100 kW for green energy, to enable small consumers also to purchase renewable power through open access.
- Consumers may demand supply of Green Power from DISCOMs.
- Commercial and Industrial consumers are allowed to purchase green power on a voluntary basis.
- There shall be a uniform Renewable Purchase Obligation (RPO), on all obligated entities in the area of a distribution license. Green Hydrogen/Green Ammonia included for fulfillment of its RPO.

MEASURES TO STOP BLACK MARKETING FERTILISERS

In News: Multi-pronged measures are being taken by Department of Fertilizers, Government of India for deterrence against any malpractices and ensuring quality fertilisers for the farmers.



- The MRP of urea is currently fixed at Rs 5,628 per tonne.

Subsidy on Non-Urea Fertilisers:

- The MRPs of non-urea fertilisers are decontrolled or fixed by the companies.
- But the government has, in recent times, and especially with the global price surge post the Russia-Ukraine war, brought these fertilisers under the control regime.
- All Non-Urea based fertilisers are regulated under Nutrient Based Subsidy (NBS) Scheme.

More on the Topic:

- Special teams of dedicated officers called Fertilizer Flying Squads (FFS) have been formed to keep a strict vigil and to check diversion, black marketing, hoarding and supply of sub- standard quality of fertilizers across the country.
- Implementation of Prevention of Black marketing and Maintenance of Supplies (PBM) Act by the department for diversion and black marketing of urea has been strengthened in the last one year.
- New innovative practices are being encouraged, such as a new mixture module that have been developed in Integrated Fertilizer Management System (iFMS) by Department of Fertilizers.
- This would help in spreading awareness amongst farmers about the quality of fertilizers along with other online services available on the portal.
- Mandatory Neem Coated Urea to prevent illegal diversion for non-agricultural uses has been implemented successfully.
- One Nation, One Fertilizer (ONOF) Scheme and Soil Health Card for wise Fertilizer use also helping the farmers on a large scale.

Indian Fertiliser Policy:

- Only agricultural urea is subsidised in India- which creates incentives to divert subsidised urea to industry and across the border. In India, urea is the most produced, imported, consumed and physically regulated fertiliser of all. It is subsidised only for agricultural uses.
- The Centre pays a subsidy on urea to fertiliser manufacturers on the basis of cost of production at each plant and the units are required to sell the fertiliser at the government -set Maximum Retail Price (MRP).

CENTRAL COUNTERPARTIES (CCPS)

In News: The European Securities and Markets Authority (ESMA), the European Union (EU's) financial markets regulator and supervisor, has derecognised six Indian central counterparties (CCPs) from April 30, 2023.

More on the Topic:

- A central counterparty (CCP), also known as a central counterparty clearing house, aids the process of financial transactions by acting as an intermediary during a trade.
- Central counterparties perform two main functions as the intermediary in a market transaction – clearing and settlement – and guarantee the terms of trade.
- Central counterparty clearing houses mainly work towards establishing efficiency and stability in the financial markets.
- Traders are benefited by the central counterparty clearing house or CCP as it reduces the risks related to the counterparty and other risks like operational, settlement, market and legal risks.
- A CCP is authorised by the RBI to operate in India under the Payment and Settlement Systems Act, 2007.
- With the withdrawal of recognition, they will no longer be able to provide services to clearing members and trading venues established in the EU.

What is the issue?

- As per the European Market Infrastructure Regulations (EMIR), a CCP in a third country can provide clearing services to European banks only if it is recognised by ESMA.
- The decision to derecognise Indian CCPs came due to 'no cooperation arrangements'

between ESMA and Indian regulators – the Reserve Bank of India (RBI), the Securities and Exchange Board of India (SEBI) and the International Financial Services Centres Authority (IFSCA).

- While ESMA wants to supervise these six CCPs, Indian regulators are of the view that since these domestic CCPs operate in India and not in the EU, these entities cannot be subjected to the ESMA regulations.
- They feel that these six CCPs have robust risk management and there is no need for a foreign regulator to inspect them.

What will be the impact of the move?

- The Counterparty Clearing house or CCP is important in the trading world as it collects money from both the trading parties including the buyers and sellers which ensures that both parties will follow through the said agreement.
- The money collected is enough to cover the potential losses in case any party fails to follow through the contract.
- With the withdrawal of recognition, these TC-CCPs will no longer be able to provide services to clearing members and trading venues established in the EU.
- The derecognition will impact the lenders and they will have to set aside additional capital to trade in the domestic market.
- The clearing members will also be impacted by way of higher capital requirements, increased margin requirements, enhanced credit risk and lack of multilateral netting benefit.

SECURITIES AND EXCHANGE BOARD OF INDIA (SEBI)

In News: Securities and Exchange Board of India (SEBI) unveiled its new logo on the occasion of 35th SEBI Foundation Day.



भारतीय प्रतिभूति और विनिमय बोर्ड
Securities and Exchange Board of India

More on the Topic

- The Securities and Exchange Board of India

was constituted as a non-statutory body in 1988 through a resolution of the Government of India.

- The Securities and Exchange Board of India was established as a statutory body in the year 1992 through the provisions of the Securities and Exchange Board of India Act, 1992.
- SEBI Board consists of a Chairman and several other whole time and part time members.
- SEBI also appoints various committees, whenever required to look into the pressing issues of that time.
- A Securities Appellate Tribunal (SAT) has been constituted to protect the interest of entities that feel aggrieved by SEBI's decision.
- It has the same powers as vested in a civil court. Further, if any person feels aggrieved by SAT's decision or order can appeal to the Supreme Court.

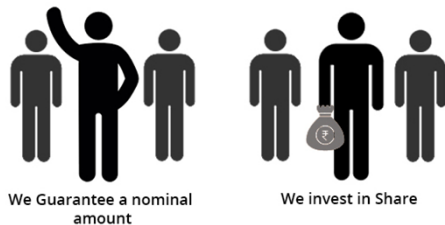
Powers and Functions of SEBI:

- It is a quasi-legislative and quasi-judicial body that can draft regulations, conduct inquiries, pass rulings, and impose penalties.
- Its primary objective is to protect the interests of Indian investors in the securities market and promote its development.
- It functions to fulfill the requirements of three categories –
- **Issuers** – By providing a marketplace in which the issuers can increase their finance.
- **Investors** – By ensuring safety and supply of precise and accurate information.
- **Intermediaries** – By enabling a competitive professional market for intermediaries.
- It prohibits fraudulent and unfair trade practices within the securities market and related to it.
- It educates investors about securities markets and their intermediaries.
- It can regulate any money pooling scheme worth Rs. 100 crore or more and attach assets in cases of non-compliance.
- SEBI Chairman has the authority to order "search and seizure operation".

COMPANY LIMITED BY GUARANTEE

In News: The Union Ministry of Fisheries, Animal Husbandry & Dairying approved a Rs 2 crore subsidy to a Company Limited by Guarantee.

Limited by Guarantee vs Limited by Shares



More on the Topic:

- A company limited by guarantee is one in which, if the company goes bankrupt, those running it only have to pay a sum they had guaranteed to pay when it was set up.
- Usually, this structure is put in place for charitable organisations and non-profits, where any profit earned by the company is re-invested into the business.
- The members or guarantors can seek donations and funds in the name of the company, but if it fails, they are shielded from the debts it may have accrued.

BANK FOR INTERNATIONAL SETTLEMENTS (BIS)

In News: RBI and the BIS Innovation Hub have jointly announced the fourth edition of the G20 TechSprint.

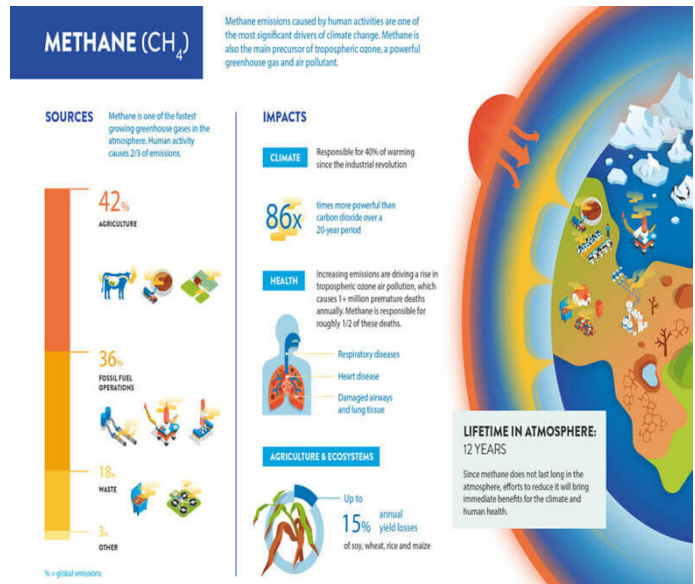
More on the Topic:

- RBI said that the 2023 TechSprint will focus on developing innovative technology solutions for cross-border payments.
- The competition is open for developers around the world.
- The Bank for International Settlements is an international financial institution owned by central banks including RBI.
- It "fosters international monetary and financial cooperation and serves as a bank for central banks".
- Its headquarter is in Basel, Switzerland.

ENVIRONMENT AND ECOLOGY

METHANE POLLUTION

In News: According to a new study only 13% of methane emissions are covered by global methane mitigation policies.



More on the Topic:

- Methane is 80 times more potent than carbon dioxide over 20 years.
- According to the International Energy Agency, it is responsible for around 30 % of the rise in global temperatures since the Industrial Revolution,
- Agriculture, fossil fuels as well as solid waste and wastewater are the three major sources of methane.
- Methane emissions are increasing faster than at any time since the 1980s.

Methane Mitigation Policies:

- Methane policies are actions by governments that explicitly aim to monitor, prevent, or reduce methane emissions from anthropogenic sources.
- Currently, 281 policies are in place across sectors that release methane, including energy, waste, and agriculture. Of them, 255 are currently in force.
- 90% of identified national policies were from three regions: North America (39%), Europe (30%), and Asia Pacific (21%).
- Central and South America, Africa, the Middle East, Russia, and Central Asia represented the remaining 10 %.
- Their analysis showed that policies targeting

fossil methane (coal, oil, and gas) are lower than biogenic methane (released by living organisms).

- Almost half of them (49%) target methane emissions from fossil fuels, and 42% of policies target biogenic methane originating from waste and agriculture and waste sectors.
- Fossil methane emissions policies are less stringent than the biogenic sources.
- The waste policies were identified as being the most stringent, followed by oil and gas, agriculture and coal.

Factors contributing to less stringency of policies on fossil methane:

- The relative importance of those industries to national and subnational economies, energy and food security or rural poverty considerations (reduction of methane emissions from agriculture touches upon cultural issues, as food is part of our culture).
- Most policies target emissions from animal waste rather than enteric fermentation despite the former being a smaller source of emissions.
- Enteric fermentation occurs in the digestive systems of ruminant animals such as cattle, buffalo, sheep, goats and camels, which are the largest sources of methane emissions from agriculture.

India's policies:

- In India, there are no effective policies targeting methane emissions from rice cultivation and biomass burning.
- While the Indian federal and state rules -- advisories, bans and incentive systems -- have been adopted since 2014, they have been only partially enforced.
- The 1997 Coalbed methane policy was ineffective in incentivising coalbed methane production.
- Coalbed methane is the methane produced during the coal formation process, which gets trapped on the surface of the coal in tiny pores and fractures.
- While reducing livestock or rice-production-related emissions is challenging, India can contribute by reducing emissions associated with coal production

PACIFIC OCEAN LEAK

In News: The discovery of a leak at the bottom of the Pacific Ocean off the coast of Oregon has created concerns worldwide.



More on the Topic:

- The hole at the Pacific Ocean's bottom has been steadily leaking warm tectonic lubricant liquid into the ocean. This hole is about 80 km off the Oregon coast.
- Researchers are worrying that this hole could trigger a huge megathrust earthquake.
- The liquid is coming from the Cascadia megathrust (the boundary between two of Earth's tectonic plates), where temperatures are estimated to be around 300 and 500 degrees Fahrenheit.
- The megathrust is the area between the Juan de Fuca tectonic plate and the North American plate.
- The fault's loss of fluid could lower the fluid pressure between the two plates, which can then cause friction.
- The researchers believe this is the first known leak of its kind in this ocean.

ENDOSULFAN

In News: Supreme Court transfers endosulfan case to Kerala HC for monitoring government's medical and palliative measures for victims.

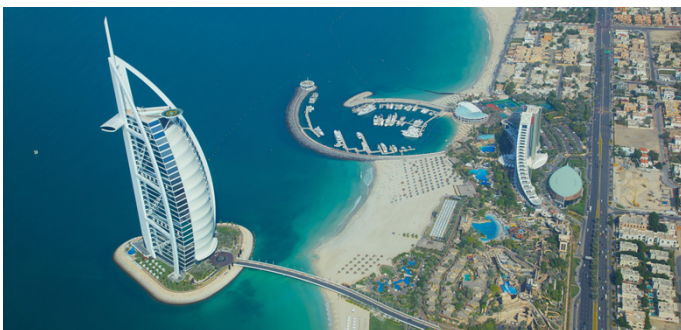


More on the Topic:

- Endosulfan is an organochlorine insecticide and acaricide that was widely used for pest control in agriculture.
- It is a highly toxic chemical that poses significant risks to human health and the environment. Due to its harmful effects, endosulfan has been banned or severely restricted in many countries.
- Endosulfan acts as a neurotoxin, affecting the central nervous system of insects, mites, and other pests.
- However, it can also have adverse effects on non-target organisms, including mammals, birds, fish, and beneficial insects.
- It is highly persistent in the environment and can bioaccumulate in organisms, leading to long-term exposure and potential harm to ecosystems.
- Numerous studies have linked Endosulfan exposure to a range of health problems in humans.
- Short-term exposure to high doses can cause acute poisoning, leading to symptoms such as nausea, vomiting, headache, dizziness, and even seizures.
- Long-term exposure, even at low levels, has been associated with various health effects, including reproductive disorders, developmental abnormalities, hormonal disruptions, and an increased risk of certain cancers.

SEA LEVELS RISE AND LAND RECLAMATION LINE

In News: Despite the considerable cost and engineering challenges, coastal land reclamation has become “a global-scale phenomenon” over the last two decades.



More on the Topic:

- A recent study, which examined satellite

imagery of coastal cities with a population of at least 1 million, found that reclamation projects in 106 cities around the world had altogether created around 2,530 square kilometers (more than 900 square miles) of coastal land.

- Nearly 90% of that land was created in East Asia, most often to make way for industry and port facilities catering to the globalized economy. From 2000 to 2020, Shanghai alone added around 350 square kilometers, with Singapore and Incheon, in South Korea, also raising vast new areas.
- Land reclamation will continue to be a solution for many countries around the world to address its more pressing needs for increased development and urbanization, balancing economy and ecology.

About Land Reclamation:

- Land reclamation, usually known as reclamation, and also known as land fill, is the process of creating new land from oceans, seas, riverbeds or lake beds.
- The land reclaimed is known as reclamation ground or land fill.
- Land reclamation can be achieved by a number of different methods.
- The simplest method involves filling the area with large amounts of heavy rock and/or cement, then filling with clay and dirt until the desired height is reached.
- The process is called “infilling” and the material used to fill the space is generally called “infill”.
- People have been reclaiming land from the sea for centuries, to control flooding and make more space for agriculture and coastal industries.
- Traditionally, this meant building a series of dikes to enclose tidal marshes or shallow offshore waters and draining these enclosures to create dry land.
- In some cases, streams were diverted to carry additional sediment into these areas, building up the land to a higher level.

Challenges of Coastal Reclamation:

- Coastal reclamation is a costly engineering practice economically, socially, and ecologically.
- The coastal reclamation projects will last only several decades and would later require

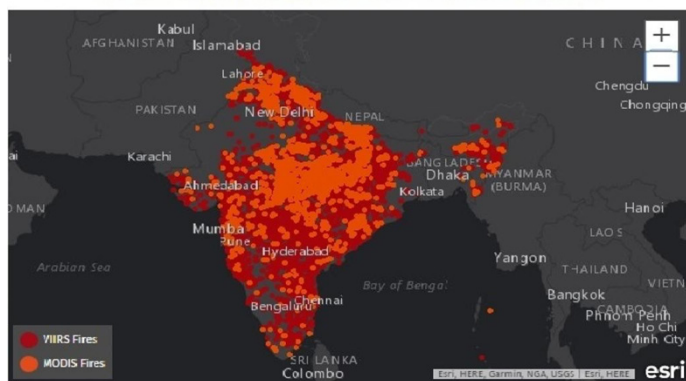
an equally exorbitant amount of money to maintain.

- The environmental cost of land reclamation projects can be significant.
- Using materials like sand which are obtained from the marine and river environment can mean the destruction of habitats and spawning grounds of organisms, leading to a serious impact on the food webs from an environmental, ecological and conservation points of view.

FOREST FIRES

In News: A forest department probe into the bushfires that impacted an area of about 4 sq km in Goa in the first half of March is learnt to have concluded that the fires were largely triggered by natural causes.

DISTRIBUTION OF FIRE ALERTS 19 APR 2018 - 26 APR 2018



More on the Topic:

- According to the inquiry report, 74 fire incidents – 32 of which affected three wildlife sanctuaries – were reported in the first fortnight of March in Goa.
- A total of 418 hectares of private land, reserve forests, comunidade land, and protected areas were affected, including more than 320 hectares of forest land.

The connection between weather and fires?

- Very little rain in Goa since October last year, along with heat-wave-like conditions and low humidity, created conditions that were ripe for forest fires.
- Once the carpet of dry leaves on the hilltops caught fire, the flames were fanned and spread by high winds.
- Incidents of forest fires in Goa during the summer have been more in the years following those of poor monsoon rain. A similar pattern has been seen in Karnataka as well.

Trends of rising incidents of forest fires in India:

- A study published by Council of Energy, Environment and Water (CEEW), has noted a tenfold increase in forest fires over the past two decades and says more than 62% of Indian states are prone to high-intensity forest fires.
- Forest fires have become more frequent and more intense, and have occurred in a larger number of months over this period.
- Andhra Pradesh, Odisha, Maharashtra, Madhya Pradesh, Chhattisgarh, Uttarakhand, Telangana, and the Northeastern states are most prone to forest fires.
- Mizoram has seen the highest incidence of forest fires over the last two decades, and 95% of its districts are forest fire hotspots.
- A report by the Ministry of Environment, Forest and Climate Change for 2020-21 identified western Maharashtra, southern Chhattisgarh, parts of Telangana and Andhra Pradesh, and central Odisha as becoming 'extremely prone' to forest fires.
- An FSI study based on the spatial analysis of forest fires points during the period 2004-21 has found that nearly 10.66% area under forests in India is 'extremely' to 'very highly' fire-prone.

Government Initiatives:

- National Action Plan on Forest Fires (NAPFF) was launched in 2018 to minimise forest fires by informing, enabling and empowering forest fringe communities and incentivising them to work with the State Forest Departments.
- The Forest Fire Prevention and Management Scheme (FPM) is the **only centrally funded program** specifically dedicated to assist the states in dealing with forest fires.
- Forest Survey of India (FSI) initiates including Near Real-Time Forest Fire Monitoring and issuing alert to State Forest Departments, Large Forest Fire Monitoring using SNPP-VIIRS sensor, Early Warning Alert based on Forest Fire Danger Rating System and FSI Van Agni Geo-portal.

RIVER-CITIES ALLIANCE (RCA)

In News: National Mission for Clean Ganga (NMCG) in association with the National Institute of Urban Affairs (NIUA) organized the 'River-Cities Alliance (RCA) Global Seminar: Partnership for Building International River- Sensitive Cities'.



More on the Topic:

- The River Cities Alliance (RCA) is a joint initiative of the Department of Water Resources, River Development & Ganga Rejuvenation under the Ministry of Jal Shakti (MoJS) & the Ministry of Housing and Urban Affairs (MoHUA), with a vision to connect river cities and focus on sustainable river centric development.
- RCA is a dedicated platform for river cities to ideate, discuss and exchange information for sustainable management of urban rivers.
- Beginning with 30 member cities in November 2021, the Alliance has expanded to 109 river cities across India and one international member city from Denmark.

GROUNDWATER EXPLOITATION AND SINKING LAND

In News: Groundwater exploitation is silently sinking the ground. Subduction in parts of Haryana, Punjab and Delhi is as high as 7-12 cm a year, but a reversal is possible if aquifers are left to charge



More on the Topic

- Agricultural practices in northwest India are heavily dependent on groundwater withdrawal.
- According to the Central Ground Water Board (CGWB), With limited monsoon rain, the groundwater table is precariously low.
- In Punjab, for instance, 76% of the groundwater blocks are 'over exploited'. In Chandigarh it is 64% and about 50% in Delhi. This means that more groundwater than can be recharged is extracted.
- Over time, when the underlying aquifers (deep water channels that are stores of percolated water) aren't recharged, they run dry and the layers of soil and rock above them start to sink.
- GRACE (Gravity Recovery and Climate Experiment) satellites that could measure minute changes in gravity on different parts of the earth's surface has revealed that excessive groundwater extraction is linked to land subsidence.
- Over exploited groundwater blocks and land subsidence has been reported in Kolkata and parts of eastern India too.

About Land Subsidence:

- Land subsidence refers to the gradual sinking or settling of the Earth's surface, usually due to the compaction of underground layers of soil, rock, or other materials.
- It occurs when the support structures beneath the land, such as aquifers, underground mines, or natural gas extraction, are depleted or when certain geological processes take place.
- In urban areas, it can damage infrastructure, including roads, buildings, and underground utilities.
- It can also increase the risk of flooding in coastal regions by reducing the elevation of the land relative to sea level.
- In agricultural areas, subsidence can affect irrigation systems, disrupt the flow of water in rivers and canals, and cause permanent damage to farmland.

Difficulty to find land subsidence:

- Unlike land movement from landslips or earthquakes, subsidence from groundwater extraction was gradual and barely visible annually. So, it is harder to correlate with

structural damage.

India's Groundwater Statistics:

- India has 17% of the world's population, but possesses only 4% of the world's fresh-water resources.
- The annual per capita availability of water has declined by 75% – from 6,042 cubic meters in 1947 to 1,486 cubic meters in 2021.
- According to the most recent Central Ground Water Board data, as many as 256 of 700 districts in India have reported 'critical' or 'overexploited' groundwater levels.
- India is the largest user of Groundwater (GW) (accounting for 1/4th of total withdrawal)

Reasons for increased Ground Water Extraction:

- Successive droughts and erratic rainfall have led to excess extraction of groundwater.
- Low prices or free electricity offers an incentive for the unchecked lifting of groundwater. The vast majority of groundwater pumps are unmetered, and if charged, are billed at a flat, non-volumetric, and highly subsidized tariff.
- The Green Revolution caused the overuse of groundwater.
- Government encourages farmers to produce water-intensive crops like rice and sugarcane through increased minimum support prices (MSP).

PEOPLE'S BIODIVERSITY REGISTER (PBR)

In News: The National Campaign for Updating and Verifying the People's Biodiversity Register (PBR) was launched in Goa, India, with an aim to document and preserve India's diverse biological resources.



More on the Topic:

- The program of People's Biodiversity Register (PBR) is designed as a tool for the formal maintenance of local knowledge with proper validation.

- PBR is a record of knowledge, perception and attitude of people about natural resources, plants and animals, their utilization and conservation in a village or a panchayat.
- As per Biological Diversity Act 2002, Biodiversity Management Committees (BMC) are created for "promoting conservation, sustainable use and documentation of biological diversity" by local bodies.
- BMCs have been entrusted with preparation of PBRs, in consultation with local communities.

INNOVATIVE FINANCE FACILITY FOR CLIMATE IN ASIA AND THE PACIFIC (IF-CAP) PROGRAM

In News: The Asian Development Bank (ADB) has announced a new financing program for the Asia Pacific (APAC), which will significantly help the region accelerate actions required to combat climate change.



IF-CAP

Innovative Finance Facility
for Climate in Asia and the Pacific

A Landmark in Climate Finance Innovation



More on the Topic:

- The program – Innovative Finance Facility for Climate in Asia and the Pacific (IF-CAP) will initially include Denmark, Japan, South Korea, Sweden, the United Kingdom, and the United States as partner nations.
- IF-CAP financing will contribute to ADB's ambition for \$100 billion from its resources for combating climate change for 2019–2030.
- The guarantees will limit the risk exposure, allowing ADB to free up capital that would, in turn, accelerate new loans required for climate action by encouraging the adoption of renewable energy.
- The guarantee mechanism is said to be the first of its kind adopted by a multilateral development bank for climate finance.
- **Financing Mechanism:** Financing Mechanisms are Global Environment Facility (GEF), Green Climate Fund (GCF), Adaptation

Fund, and Loss and Damage Fund.

- **Funding Sources:** Bilateral and multilateral sources, the private sector, and philanthropies including the Global Energy Alliance for People and Planet.

Benefits:

- The multiplier effect of up to \$5 in much-needed climate finance for every \$1 of guarantees (model of '\$1 in, \$5 out')
- Financing will help vulnerable countries in Asia and the Pacific region meet their mitigation and adaptation goals.
- Support ADB's raised ambition for \$100 billion in climate finance from 2019-2030.

About ADB:

- ADB, established in 1966 is owned by 68 members-49 from the region.
- It aims to promote social and economic development in Asia and the Pacific.
- It is headquartered in **Manila, Philippines**.
- It assists members and partners by providing loans, technical assistance, grants, and equity investments to promote social and economic development.

TEA PLANTATION

In News: The FSSAI has decided to immediately implement the revised maximum residue limits (MRLs) for these five pesticides in tea.

Parameters	Ideal condition
Climate	Hot, moist climate
pH	Acidic soil
Temperatures	10-30°C
Annual precipitation	1250 mm (minimum)
Slopes	0.5-10°
Elevations	2000

More on the Topic:

- The pesticides included in the regulation are, Emamectin Benzoate, Fenpyroximate, Hexaconazole, Propiconazole and Quinalphos.
- India is the 2nd largest tea producer and largest black tea producer after China and 4th largest exporter of Tea in the world.

Ideal climate condition for tea cultivation:

- Tea requires cool to warm temperatures with at least 5 hours of sunlight per day.
- The average annual temperature for tea plants to grow well is in the range of 15 – 23°C.

- The rainfall needed is **between 150-200 cm**.
- **Area should not be prone to frost**.
- **Soil should be acidic** (around pH 5.0) having a good drainage facility.

GREEN SHIPPING

In News: The Union minister of ports, shipping & waterways (MoPSW) has announced that MoPSW will offer 30% financial support to promote green shipping.

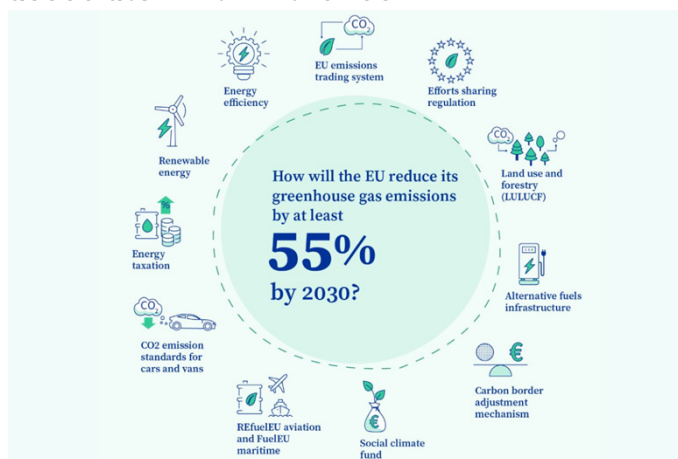


More on the Topic:

- The move aims to **bolster sustainable practices** and propel India toward a green maritime sector.
- Green shipping promotes **cleaner practices to enforce emission control, efficient port management, and equipment management**.
- It needs a great effort from every part of the sector such as the regulators, port authorities, and communities to continue this forward.

FIT FOR 55

In News: The European Union has passed laws associated with 'Fit for 55'.



More on the Topic:

- Fit for 55' package sets the EU's policies in line with its commitment to reduce its net greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels and to achieve climate neutrality in 2050.
- The laws extends to:
- Extension to emissions from maritime transport.
- Reduction of emissions allowances.
- Implementation of the global carbon offsetting and reduction scheme for international aviation.
- Increase funding for an innovation fund. Revision of the market stability reserve.

HIJOL TREE SPECIES

In News: According to a new study, The suitable habitat for Hijol to grow in the India-Bangladesh landscape may shrink by 50.5% because of rainfall and temperature changes.

More on the Topic:

- The water-loving evergreen tree, Hijol, adapted to floodplains, has been traditionally managed over millennia as family and community forest in the Ganges-Brahmaputra-Meghna basin.
- Hijol or Indian oak (*Barringtonia acutangula*, family: *Lecythidaceae*) is a medium-sized evergreen tree, native to riverine Bangladesh.
- The plant is propagated by seeds.
- This evergreen tree is known as Dhatriphal in Sanskrit.

The importance of Hijol to farmers:

- The primary vocation of the floodplain farmer is fish farming. The use of *Barringtonia* is intricately related to fish farming in Assam.
- The branches of the trees are used in fisheries to check for predators as the network of branches provide hiding spaces for the fish during threats by predators.
- Complex branches hinder illegal fishing by other fishermen as well. Additionally, the rough branch surface is conducive to grow algae.

PYGMY HOG

In News: African Swine Fever (ASF), the livestock illness that has decimated porcine populations across Asia since its advent in China in 2018, could deal a lethal blow to the pygmy hog, the world's rarest and smallest pig.

More on the Topic:

- It is one of the very few mammals that build its own home, or nest, complete with a 'roof'.
- It is also an indicator species. Its presence reflects the health of its primary habitat, the tall, wet grasslands of the region.
- It thrives in wet grassland.
- The pygmy hog is a conservation success story for India.
- Once thought to be extinct, it was rediscovered in 1971.
- The Durrell Wildlife Conservation Trust, United Kingdom, initiated the Pygmy Hog Conservation Programme in 1995.
- Pygmy hogs were brought into captivity in 1996 to start the recovery programme.
- Between 2008 and 2022, 152 individuals have been reintroduced into four protected areas (PAs) in Assam

Protection Status:

- IUCN Red List: Endangered
- CITES: Appendix I
- Wildlife (Protection) Act, 1972: Schedule I

CENTRAL ASIAN FLYWAY (CAF)

In News: The Ministry of Environment, Forest and Climate Change in collaboration with the United Nations Environment Programme/Convention on Migratory Species (UNEP/CMS) had organised a meeting of Range Countries to strengthen conservation efforts for migratory birds and their habitats in the Central Asian Flyway (CAF).



More on the Topic:

- CAF encompasses overlapping migration routes over 30 countries for different water-birds linking their northernmost breeding grounds in Russia (Siberia) to southernmost non-breeding (wintering) grounds in West and South Asia, Maldives and British Indian Ocean Territory.
- It is home to more than 400 species of migratory birds, including threatened and endangered species such as the Siberian crane and the lesser white-fronted goose.
- Of these 30 countries, 11 have come on-board for coordinated efforts to save migratory birds within the Central Asian flyway. These eleven countries are India, Armenia, Bangladesh, Kazakhstan, Kyrgyzstan, Kuwait, Mongolia, Oman, Saudi Arabia, Tajikistan and Uzbekistan.
- The formalisation of the Central Asian Flyway initiative is being seen as a significant step towards the conservation of migratory birds and their habitats.
- Other than eleven countries, twenty nine more nations must also come on-board for the formalisation of complete Central Asian Flyway within one single mechanism.

About flyway:

- A flyway is a geographical region within which a number of migratory bird species complete their annual cycle. The annual cycle includes breeding, moulting, staging and non-breeding.
- A total of 370 species of migratory birds visit the Indian subcontinent annually.

India's leading role in Central Asian Flyway and conservation of Migratory Species:

- India has been taking proactive steps in the conservation of migratory birds and their habitats and has been advocating establishment of a Central Asian Flyway initiative that first began in 2005 in New Delhi.
- India provides critical stopover sites to over 90% of the bird species known to use this migratory route.
- Also, India developed a National Action Plan for Conservation of Migratory Birds and their Habitat (2018 - 2023).

SEA BUTTERFLIES

In News: Sea butterflies are threatened by climate change.



More on the Topic:

- The stunning sea butterflies, a suborder of sea snails, are tiny creatures that play a big role in the marine ecosystem.
- But the smallest species in this group found in the Southern Ocean are extremely vulnerable to climate change and their population is shrinking in a warming world.
- The shelled pteropods (group of free-swimming sea snails) live at or very close to the ocean surface.
- Like snails, they have muscular feet that they use as flappers to swim around in water, instead of gliding on solid surface.
- As the sea absorbs an increasing quantity of carbon dioxide (CO₂) that turns the water more acidic, the thin outer casing, or the 'homes' of these small sea butterflies, dissolve.
- This leaves them exposed, making it difficult for these delicate species to survive.
- The sea butterflies are included in the Pteropoda order, and are also included in the informal group Opisthobranchia.

ERETMOPTERA MURPHYI

In News: Eretmoptera murphy - a flightless midge is changing the soil composition of Antarctica's Signy Island.

More on the Topic:

- It has caused nitrate levels in the island's soil to spike in the magnitude previously only seen in colonies of much larger species like penguins or seals.



- **Eretmoptera murphyi** is an invasive species on Antarctic Signy Island.
- It can survive in water.
- It is a native of South Georgia, a sub-antarctic Island, and was accidentally introduced to Signy in the 1960s during a botany experiment. Its proliferation became apparent in the 1980s.
- **Eretmoptera murphyi** feasts on dead organic matter and has led to faster plant decomposition, thus increasing the soil nitrate levels by three-five times compared to places on the island where only native invertebrate species live.
- Experts have proposed some theories for the cause of the spread of *murphyi*, the most prominent one being through humans.
- It is possible they clung to the soles of researchers and tourists who walked over their colonies and traveled longer distances than they could have by any other means.

WORLD BEE DAY

In News: The Ministry of Agriculture and Farmers Welfare (MoA&FW), Government of India is celebrating World Bee Day.



More on the Topic:

- World Bee Day is celebrated on May 20. On this day Anton Janša, the pioneer of bee-keeping, was born in 1734.
- The purpose of the international day is to

acknowledge the role of bees and other pollinators for the ecosystem.

- The UN Member States approved Slovenia's proposal to proclaim 20 May as World Bee Day in December 2017.

Significance of Bees :

- Bees are some of the most important pollinators, ensuring food and food security, sustainable agriculture, and biodiversity.
- Climate change is causing bees, among nature's primary pollinators, to die in Himachal Pradesh and the Kashmir Valley.
- This has led to major losses for apple growers in the two areas and could impact their respective economies.
- Bees significantly contribute to the mitigation of climate change and the conservation of the environment.
- Bees are important for the economic opportunities Bees provide for farmers.
- India ranked eighth in the world in terms of honey production. Beekeeping can be an important contributor in achieving the 2022 target of doubling farmer incomes.

GANGETIC DOLPHINS

In News: Thickly knitted fishing gill nets have caused the death of yet another Gangetic river dolphin recently.



More on the Topic:

- Dolphins are one of the oldest creatures in the world along with some species of turtles, crocodiles and sharks.
- The Ganges river dolphin was officially discovered in 1801.
- Ganges river dolphins once lived in the Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu river systems of Nepal, India, and Bangladesh. But the species is

extinct from most of its early distribution ranges.

- The Ganges river dolphin can only live in freshwater and is essentially blind. They hunt by emitting ultrasonic sounds.
- They are frequently found alone or in small groups, and generally a mother and calf travel together.
- Females are larger than males and give birth once every two to three years to only one calf.
- The government of India declared it the **National Aquatic Animal** in 2009.
- **IUCN STATUS:** Endangered

ORANG NATIONAL PARK

In News: A full grown rhino has died in an infighting with another rhino in Orang National Park.



More on the Topic:

- The park is located on the northern bank of the Brahmaputra river in Assam.
- Pachanoi river, Belsiri river and Dhansiri River border the park and join the Brahmaputra river.
- It is the only stronghold of rhinoceros on the north bank of the Brahmaputra river.
- Flora and fauna: includes great Indian rhinoceros, pygmy hog, Asian elephant, wild water buffalo and Bengal tiger.

GHARIALS

In News: The World Wildlife Fund-Pakistan (WWF-Pakistan) confirmed reports of gharials being present (Gavialis gangeticus) in Punjab.

More on the Topic:

- Gharials are a type of Asian crocodilian distinguished by their long, thin snouts.



- Crocodilians are a group of reptiles that includes crocodiles, alligators, caimans, and more.
- Their Habitats include Fresh waters of northern India – Chambal river, Ghagra, Gandak river and the Sone river (Bihar).
- Gharial is an indicator specie which indicates clean river water.

BAOBABS TREES

In News: Bhil Tribes are fighting against uprooting of Baobabs trees in Madhya Pradesh.



More on the Topic:

- The endangered Baobabs belonging to the genus Adansonia are native to mainland Africa, Madagascar, and Australia.
- They have unusual barrel-like trunks and are known for their extraordinary longevity (live up to 2,000 years) and ethnobotanical importance.

- The tree's unique pendulous flowers are pollinated by bats and bush babies (Galagos).
- Madhya Pradesh government has applied for a Geographical Indication (GI) tag for Baobabs.

PROSOPIS CHILENSIS

In News: An alien invasive plant, *Prosopis chilensis* is threatening to pulverise native vegetation across 21 islands in the Gulf of Mannar Biosphere Reserve (GoMBR).

More on the Topic:

- *Prosopis chilensis*, a drought-resistant plant native to the arid regions of four South American countries – Argentina, Bolivia, Chile, and Peru – is not the only trouble for these islands divided into the Tuticorin, Vembar, Kilakkarai, and Mandapam groups
- Corals, seagrass, and mangroves are among the three unique ecosystems present on the islands.
- The GoMBR, India's first marine biosphere reserve, is one of the important habitats for coastal birds migrating as far as the Arctic Circle. The area is of particular significance as the 21 islands also serve as resting places for birds migrating to and from the nearby Sri Lankan islands.
- The highest number of water bird species, inclusive of waders, ducks, terns, gulls, egrets, and herons, was recorded on Manoli island of the Kilakkarai group. But 19 species of shorebirds were recorded compared to 26 listed in a 1990 study.

BURA CHAPORI WILDLIFE SANCTUARY

In News: Following the anti-encroachment drive at Bura Chapori Wildlife Sanctuary in Assam Chief Minister has shared photographs of the successful eviction drive at the wildlife sanctuary.

More on the Topic:

- Bura Chapori Wildlife Sanctuary is a protected area located in the state of Assam in India.
- It is situated on the south bank of the Brahmaputra River.
- It comprises wet alluvial grassland, riparian and semi-evergreen forests dotted by wetland and river systems.
- It is a part of Laokhowa wildlife sanctuary

(centrally located Protected Area of Assam) and is a notified buffer of the Kaziranga Tiger reserve.

KALI TIGER RESERVE (KTR)

In News: National Tiger Conservation Authority has stepped in over illegal resorts in Kali Tiger Reserve.



More on the Topic:

- It is a protected area and tiger reserve.
- It is located in Uttara Kannada district, in Karnataka, India.
- The park is a habitat of Bengal tigers, black panthers and Indian elephants, amongst other distinctive fauna.
- The Kali River flows through the tiger reserve and is the lifeline of the ecosystem and hence the name.
- The tiger reserve is spread over an area of 1300 square kilometres.

National Tiger Conservation Authority:

- The National Tiger Conservation Authority (NTCA) is a statutory body under the Ministry of Environment, Forest and Climate Change.
- It was established in 2005 following the recommendation of the Tiger Task Force to ensure the conservation of tigers in India.
- The main objective of NTCA is to protect and conserve the population of tigers in India by ensuring a viable population of tigers, their prey base, and their habitat.
- The NTCA is responsible for implementing the Project Tiger initiative, which aims to conserve tigers and their habitat in India.
- The NTCA is also responsible for providing funds and technical support to tiger reserves in India, and for monitoring their progress in terms of conservation efforts.

- It also works to resolve human-tiger conflict issues, and to strengthen law enforcement against poaching and illegal trade of tiger parts.

PETERMANN GLACIER

In News: A major glacier in northwest Greenland known as Petermann Glacier is interacting with the ocean tides, resulting in previously unaccounted-for melting and potentially faster sea level rise.



More on the Topic:

- Glacier is located in the north western Greenland and the glacier's grounding line shifts significantly with the arrival of tides.
- Grounding line is the area where the ice sheet begins to extend out on top of the ocean.
- This revelation is against the common belief of the scientists that the grounding line do not migrate with the tides.
- The phenomenon could worsen in the coming years and decades as ocean temperatures climb.
- Greenland's melting ice is the single largest contributor to sea level rise, according to NASA, which has been accelerating in recent years. But current projections do not account for this newfound contribution from under-ice interactions with warming tides.

INTERNATIONAL RELATIONS

NEW DEVELOPMENT BANK

In News: The New Development Bank (NDB) has announced the launch of its Indian Regional Office (IRO) in Gujarat International Finance Tec-City (GIFT City).



More on the Topic:

- The New Development Bank, formerly referred to as the BRICS Development Bank, is a multilateral development bank established by the BRICS states.
- According to the Agreement on the NDB, "the Bank shall support public or private projects through loans, guarantees, equity participation and other financial instruments."
- Members include BRICS nations, Bangladesh, UAE, Egypt (Uruguay is a prospective member and will become an official member once it deposits an instrument of accession).
- Headquarters is located at :Shanghai, China.
- India is the second-largest recipient of NDB's financial support after China.

INDIA AUSTRALIA RELATIONS

In News: The PM of India is on a visit to Australia.

More on the Topic:

- PM Modi said the relationship between India and Australia was described by various acronyms namely 3 Cs- commonwealth, cricket, and curry, 3 Ds- diaspora, democracy, and dosti, and 3 Es- economy, energy, and education.
- PM used a cricket analogy to describe the fast-expanding India-Australia ties, saying the relations have entered the "T-20 mode".

About India Australia Relations:

- The two nations have much in common, highlighted by shared values of a pluralistic, Westminster-style democracies, Commonwealth traditions, expanding economic engagement etc.

- Several commonalities include strong, vibrant, secular and multicultural democracies, free press, independent judicial system and English language.
- **Historic. Dimension:** India and Australia established diplomatic relations in the pre-Independence period, with the establishment of India Trade Office in Sydney in 1941.
- The end of the Cold War and simultaneously, India's decision to launch major economic reforms in 1991 provided the first positive move towards development of bilateral ties.
- The countries have also signed **India-Australia Economic Cooperation and Trade Agreement (India-Australia ECTA)** in 2022. It is a path-breaking trade agreement for both countries and is expected to enhance bilateral trade.

About the Significance of Bilateral ties to Each other:

- **Economic ties and trade relations:** Australia is India's eighth-largest trading partner and India is Australia's fifth-largest.
- India's main service exports to Australia are computer and information services and tourism.
- The main Australian service exports to India are education, education-related travel, and tourism.
- India is Australia's largest export market for gold and chickpeas, the second-largest market for coal and copper ores, and the third-largest market for lead and wool.
- Four products – coal, non-monetary gold, copper ores & concentrates, and petroleum – accounted for over 80 % of India's imports from Australia.
- Efforts are being made to increase the current trading partnership, setting clear targets to elevate it by 2030.
- Comprehensive Economic Cooperation Trade Agreement discussions are underway to deepen economic cooperation.
- **Science and Technology:** India's thriving tech ecosystem and Australia's advanced research and development capabilities present opportunities for collaboration in innovation and technology-driven sectors.
- **Regional Engagement:** India and Australia

are working together in multilateral forums such as the Quad, ASEAN, and the Indian Ocean Rim Association. They can promote a rules-based order, regional stability, and prosperity.

- **Gateway to Pacific Countries:** The growing cooperation would help India get better access to Pacific Island nations like Kiribati, Solomon Islands etc. as Australia enjoys a high degree of influence over them.
- **Indian Diaspora:** There is a rapidly growing Indian community in Australia.

G7 SUMMIT

In News: G7 summit has been held in Hiroshima.



More on the Topic

- G-7 has called for the development and adoption of technical standards to keep artificial intelligence (AI) trustworthy.
- G7 will create a ministerial forum "Hiroshima AI process" to discuss issues around generative AI, such as copyrights and disinformation.
- The G7 nations have called on major economies, such as India and China, to make a commitment to achieve net zero emissions by 2050 and reach the peak of their emissions by 2025.
- G-7 has launched the Coordination Platform on Economic Coercion to increase collective assessment, preparedness, deterrence and response to economic coercion.
- Economic coercion is defined here as a threatened or actual imposition of economic costs by a state on a target with the objective of extracting a policy concession.
- (Simply put using economic means to achieve political goals)
- It is an increasingly prominent instrument of Chinese foreign policy.

- The summit also launched the **Hiroshima Action Statement for Resilient Global Food Security** to address global food insecurity and to build more resilient, sustainable, and inclusive food systems.
- G7 countries also said that they would build economic resilience for themselves, based on a strategy of "diversifying and deepening partnerships and de-risking, not decoupling China".

About G7:

- The Group of Seven (G7) is an **inter-governmental political forum** consisting of Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.
- Its members are the **world's largest IMF advanced economies and wealthiest liberal democracies**
- As of 2020, the collective group accounts for a little over 50% of global net wealth (which is \$418 trillion), 32 to 46 % of global gross domestic product, and about 770 million people or 10 % of the world's population.

INTERNATIONAL PATHOGEN SURVEILLANCE NETWORK (IPSN)

In News: WHO and partners are launching a global network to help protect people from infectious disease threats through the power of pathogen genomics called the International Pathogen Surveillance Network (IPSN).



More on the Topic:

- The International Pathogen Surveillance Network (IPSN) will provide a platform to connect countries and regions, improving systems for collecting and analysing samples, using these data to drive public health decision-making, and sharing that information more broadly.

- The IPSN, with a Secretariat hosted by the WHO Hub for Pandemic and Epidemic Intelligence, brings together experts worldwide at the cutting-edge of genomics and data analytics, from governments, philanthropic foundations, multilateral organisations, civil society, academia and the private sector.
- Pathogen genomics analyses the genetic code of viruses, bacteria and other disease-causing organisms to understand how infectious they are, how deadly they are, and how they spread.
- With this information, scientists and public health officials can identify and track diseases to prevent and respond to outbreaks as part of a broader disease surveillance system, and to develop treatments and vaccines.

PAPUA NEW GUINEA

In News: The Prime Minister has visited Papua New Guinea recently.



More on the Topic:

- This is the first visit by an Indian Prime Minister to Papua New Guinea.
- Prime Minister Narendra Modi and his counterpart Prime Minister will jointly host the third summit of the **Forum for India-Pacific Islands Cooperation (FIPIC)**.
- Forum for India-Pacific Islands cooperation (FIPIC) is a **multinational grouping developed in 2014** for cooperation between India and 14 Pacific Islands nations which include Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Samoa, Solomon Islands, Palau, Papua New Guinea, Tonga, Tuvalu and Vanuatu.
- In view of the rising importance of the Indo

-Pacific regionally and internationally the PICs have attracted a lot of attention from countries like China, Japan, the US, Russia and others.

- With its growing maritime domain awareness, strategic ambitions and its growing economic interests in the Indo-Pacific region, India's approach to the PICs has been changing gradually as it is looking beyond its immediate region.

About Papua New Guinea:

- Papua New Guinea is an island country that lies in the south-western Pacific.
- It includes the eastern half of New Guinea and many small offshore islands.
- Its neighbours include Indonesia to the west, Australia to the south and Solomon Islands to the south-east.

POTENTIAL OF QUAD - LED BIO - MANUFACTURING HUB

In News: The Quad (Australia, India, Japan, and the United States) has set up a Critical and Emerging Technology Working Group to facilitate cooperation, monitor trends, and scout for opportunities related to developments in critical and emerging technologies, that included biotechnology.



More on the Topic:

About Biomanufacturing and its Potential:

- Biomanufacturing uses living systems, particularly microorganisms and cell cultures, to produce molecules and materials on a commercial scale.
- It has the potential to transform the global industrial system, with up to 60% of physical inputs to the global economy expected to be producible using this technology.
- Many countries, including the United States and China, recognise the need to optimise this ecosystem and have designed specific

policies to shape their bio-economies.

How can QUAD Contribute in Turning India into bio manufacturing Hub?

- India's National Biotechnology Development Strategy envisions the country as a "Global Biomanufacturing Hub" by 2025.
- While the strategy sets a target of \$100 billion for the hub, without external support it will be difficult to achieve this target.
- Quad nations have complementary strengths that can be leveraged to create this hub.
- The U.S. has significant funding capability, while all three (Japan, Australia and the U.S.) also possess advanced biotechnology innovation ecosystems and intellectual property.
- India has skilled manpower and the potential to provide affordable scale.

Why is India the ideal choice to host the bio-manufacturing hub?

- Its existing infrastructure, pharmaceutical manufacturing expertise, and the available workforce makes India an ideal candidate to develop a bio manufacturing hub.
- According to the Australian Strategic Policy Institute, India is among the top performers in the field of biomanufacturing in both the quality of research output and in the share among research publications.
- India also has significant potential in low-cost biomanufacturing, particularly in the production of enzymes, reagents, research materials, and equipment.
- According to at least one analysis, the cost of manufacturing in India is around 33% lower when compared to that in the U.S.

Challenges Which has to be Overcome By India:

- **Uplift workforce quality:** While there are many life science professionals in the country, they lack access to cutting-edge technology and training.
- Permanent training facilities can be established in universities around the Quad hub, with experts from other Quad countries providing the training.
- **Language, regulations, and data-sharing constraints** exist in India which will hamper the growth of the bio manufacturing industry.
- To facilitate cross-Quad collaboration, the

biomanufacturing hub should establish a **research collaboration office**.

- The hub can also harmonise language, regulations, and data-sharing regarding biomanufacturing to **secure supply chains for Quad nations** and facilitate international collaboration.

TRADE AND PARTNERSHIP AGREEMENT (TEPA)

In News: The Indian government and the European Free Trade Association (EFTA) states are making progress toward a new Trade and Economic Partnership Agreement (TEPA).



More on the Topic:

- If successful, a TEPA between EFTA and India could lead to integrated and resilient supply chains, new opportunities for businesses and individuals on both sides, increased trade and investment flows, job creation, and economic growth.
- India is the ninth-largest trading partner of EFTA, **accounting for about 2.5% of India's total merchandise trade in 2020-21**.
- The main items of India's exports to EFTA are textiles, chemicals, gems, and jewellery, machinery, and pharmaceuticals.
- The main items of India's imports from EFTA are machinery, chemicals, precious metals, and medical instruments.

About EFTA:

- The European Free Trade Association (EFTA) is a **four-nation bloc founded by the Stockholm Convention in 1960**.
- Iceland, Liechtenstein, Norway, and Switzerland are the EFTA States.

- The four EFTA countries are not part of the European Union (EU).

OPERATION KARUNA

In News: India has launched 'Operation Karuna' to assist Myanmar which has been devastated by Cyclone Mocha.



More on the Topic:

- Indian Navy ships carrying relief material reached Yangon.
- Super cyclone Mocha hit Bangladesh and Myanmar causing widespread devastation and killing hundreds.
- In Myanmar, Rakhine state is the worst-hit while in Bangladesh the Cox's Bazar which shelters in the world's largest refugee camp is worst-hit.
- Indian Navy remains committed to ensuring Security and Growth for All in the Region and continues to be the first responder in the region during such calamities.

MIDDLE EAST TO INDIA DEEPWATER PIPELINE

In News: South Asia Gas Enterprise (SAGE), an international consortium of companies in deepwater pipeline projects, has sought the support of the ministry of petroleum and others to develop an undersea gas pipeline from the Gulf to India.



More on the Topic:

- The proposed 2,000-km-long energy corridor connecting the Middle East and India, a \$5 billion project, can lead to an annual saving of about ₹7,000 crore in comparison with a similar quantity of liquefied natural gas (LNG) import.
- SAGE is a joint venture between India and UK based companies.
- Route being looked at is via Oman and UAE through Arabian Sea to avoid geo-politically sensitive regions.
- It will allow options to import gas from Oman, UAE, Saudi Arabia, Iran, Turkmenistan and Qatar.

DIGITAL PUBLIC INFRASTRUCTURE

In News: Member countries of the Shanghai Cooperation Organization (SCO) China, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Tajikistan, Uzbekistan have agreed on adopting India's model of building and deploying digital public infrastructure (DPI).

More on the Topic

- India, through India Stack, became the first country to develop all three foundational DPIs: digital identity (Aadhar), real-time fast payment (UPI) and a platform to safely share personal data without compromising privacy (Account Aggregator built on the Data Empowerment Protection Architecture or DEPA).
- Each DPI layer fills a clear need and generates considerable value across sectors.

Significance of DPI:

- When aggregated, foundational DPIs constitute the **backbone of a country's digital infrastructure**.
- These layers interface with each other to create an ecosystem that facilitates **seamless public service delivery and allows businesses to design novel solutions on top of the DPI layers**.
- In turn, this enables the creation of **Open Networks as not seen before**.
- India is now developing such open networks for credit (Open Credit Enablement Network), commerce (Open Network for Digital Commerce), Open Health Services Network (UHI) and many more.

- When DPIs are integrated, they can generate network effects to create these open networks for various sectors.

How India has Benefited from Digital Public Infrastructure:

- India's digital infrastructure helped overcome logistical challenges during the Covid-19 vaccination process.
- The CoWIN platform allowed India to scale its vaccine delivery quickly.
- Digitalization has also supported formalization of the economy, with around 8.8 million new taxpayers registered for GST between July 2017 and March 2022.
- Use of digital payments has expanded the customer base of smaller merchants, and easier access to financial services for individuals and companies.

75 YEARS SINCE DISPLACEMENT OF 700,000 PALESTINIANS

In News: The Nakba refers to the mass displacement and exodus of Palestinians that occurred in 1948 when Israel was established. It resulted in approximately 700,000 Palestinians being forced to leave their homes, becoming refugees.



More on the Topic

Background of Israel Palestine Issue:

- Early 20th century had both Jews and Arabs claiming historical and ancestral connections to the land of Palestine.
- In 1917 **Balfour Declaration** expressed support for a Jewish national home in Palestine
- In 1947 The United Nations has proposed a partition plan, recommending separate Jewish and Arab states in Palestine.
- In 1948 Israel had declared independence leading to the Arab-Israeli war.

- In 1967, The Six-Day War took place, with Israel gaining control of the West Bank, East Jerusalem, Gaza Strip, Sinai Peninsula, and Golan Heights.
- In 1993 The Oslo Accords were signed, establishing a framework for peace negotiations between Israel and the Palestinian Authority.

Present Situation:

- Israel occupies the West Bank and East Jerusalem, with the construction of Israeli settlements and separation barriers impacting Palestinian territories.

Present status go Palestinian Refugees:

- Nearly one-third of the registered Palestine refugees, more than 1.5 million individuals, live in 58 recognized Palestine refugee camps in Jordan, Lebanon, the Syrian Arab Republic, the Gaza Strip and the West Bank, including East Jerusalem.
- A Palestine refugee camp is defined as a plot of land placed at the disposal of United Nations Relief and Works Agency for Palestine Refugees (UNRWA), by the host government to accommodate Palestine refugees and set up facilities to cater to their needs.

India's Stand on Israel Palestine Issue:

- India's support for the Palestinian cause is an integral part of the nation's foreign policy. In 1974, India became the first Non-Arab State to recognise Palestine Liberation Organization (PLO) as the sole and legitimate representative of the Palestinian people.
- India is one of the first countries to recognise the State of Palestine.
- India was one of the 128 countries that voted in favour of the UNGA Resolution in 2017 regarding the status of Jerusalem in the backdrop of American decisions to (i) recognise Jerusalem as the capital of Israel and (ii) shift the US Embassy from Tel Aviv to Jerusalem.
- India also voted in favour of the UNGA resolution – Protection of the Palestinian Civilian Population in 2018.
- In recent years, India follows a more balanced approach and emphasised its commitment to a two-state solution.
- India supports the establishment of a sovereign, independent, and viable Palestinian state existing peacefully alongside Israel.

INTERNATIONAL INDIAN OCEAN CONFERENCE

In News: Bangladesh is hosting the sixth international Indian Ocean Conference in its capital city Dhaka.



More on the Topic

- The theme of the event is 'Peace, Prosperity and Partnership for a Resilient Future' in view of the post-Covid scenario and the ongoing Russia-Ukraine conflict.
- The IOC has been held annually since 2016 and has become a key platform for regional countries to discuss regional affairs.
- It focuses on fostering regional cooperation for Security and Growth for All in the Region (SAGAR), bringing together critical states and maritime partners in the region.
- The conference is being organized by the India Foundation in collaboration with the Bangladesh Ministry of Foreign Affairs.

What Significance of Indian Ocean Region:

- The Indian Ocean, which lies at the cross-roads of Africa, Asia, and Australia, houses a number of littorals that play critical roles in the region.
- **Strategic Choke Points:** The IOR is a vital sea lane with choke points such the Strait of Hormuz, Strait of Malacca, Bab-el Mandeb, and so forth.
- These choke points are of immense strategic importance. These choke points are exposed to piracy, international disputes, political dissents, and accidents.
- **Resource Richness:** The IOR littoral states are rich in producing various raw materials, primarily oil, which are key to development of major manufacturing industries of developed as well as developing nations.
- **Trade significance:** More than half of the global seaborne trade and commerce passes through the Indian Ocean out of which, almost

70 % goes to countries external to the region.

- **Attractive Market:** The IOR littorals house more than one-third of the world's population.

Challenges in the IOR:

- **Security Threats:** Piracy, maritime terrorism, drug trafficking, illicit weapons trafficking, illegal migrants, poaching etc are common threats in the region.
- **Rowing Chinese Presence:** Chinese presence on the ports like Gwadar, Hambantota, Djibouti to name a few, in the guise of maritime Silk Road needs no elaboration.
- **Climate Change:** Climate change is affecting all the nations especially the small island nations in the region. This might lead to an exodus of climate refugees in the near future.
- **Regional Uncertainty:** Uncertainty in Somalia, Yemen, Iran, and other countries makes maritime security in the IOR more difficult.

Way Ahead:

- **There is a need to have capability enhancement of IOR nations**, particularly their navies to accrue immense benefit for the entire IOR.
- The Chinese are developing their might in the small island nations. There is a need to close vigils and counter strategies to counter their presence and strategies in the region.
- India should **use its military presence more actively**, increasing its interaction with small nations and littoral countries
- India must make **improvements to its coordinated patrols with all of the littoral states**. It would be necessary for ASEAN to work through SAARC, BIMSTEC, and ASEAN to fill in the gaps and establish a framework for shared maritime security.
- Climate mitigation as well as disaster reduction strategies should be envisaged to help small island nations.

OECD INFORMATION EXCHANGE FRAMEWORK

In News: India is demanding to widen the scope of the common reporting standard (CRS) at the G20 grouping to include non-financial assets like real estate properties under the automatic exchange of information among OECD countries.



More on the Topic:

- AEOI is the systematic and periodic collection and transmission of “bulk” taxpayer information by the source country to the country of residence of the taxpayer, without the latter having to make a request for the same.
- Exchange of information by AEOI is permitted under provisions of DTAAs and under the **Multilateral Convention (MAAC)**. It is to be carried out under the Common Reporting Standard (CRS) of OECD.
- At present, the OECD's Automatic Exchange of Information (AEOI) framework provides for sharing of financial account details among signatory countries with an aim to check tax evasion.
- In August 2022, the OECD also approved the Crypto-Asset Reporting Framework (CARF) which provides for the reporting of tax information on transactions in Crypto-Assets in a standardised manner, with a view to automatically exchanging such information.
- As per the OECD's Tax Transparency report Asian nations have estimated to have lost €25 billion in revenue in 2016 to tax evasion.

Organisation for Economic Co-operation and Development (OECD):

- The Organisation for Economic Co-operation and Development (OECD) is an international, intergovernmental economic organization of 38 countries with market economies that work with each other, as well as with more than 70 non-member economies to promote economic growth, prosperity, and sustainable development.
- The organisation's headquarters is at the

Chateau de la Muette in Paris, France.

- OECD provides its members with a forum in which governments can work together to share experiences and seek solutions to common problems.

INTERNATIONAL CLIMATE ACTION IN CIVIL AVIATION

In News: India will start participating in the International Civil Aviation Organisation's (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and the Long-Term Aspirational Goals (LTAG) from 2027.



More on the Topic:

- The ICAO has been tasked to reduce carbon emissions from international civil aviation as one of its focus areas. In order to mitigate carbon emissions from aviation and its impact on climate change, the global body has adopted several key aspirational goals.
- Among them are a **2% annual fuel efficiency improvement through 2050, carbon neutral growth and net zero by 2050**. The ICAO has clubbed them under CORSIA and LTAG.
- CORSIA is to be implemented in three phases.
- CORSIA will mitigate around 2.5 billion tonnes of CO₂ between 2021 and 2035, which is an annual average of 164 million tonnes of CO₂.

Significance of CORSIA:

- CORSIA will enable airlines of developing countries like India to get time to **grow more so that they do not face any adverse financial consequences due to CORSIA**.
- Financial implications due to offsetting **have to be borne by individual airlines**, depending upon their international operations. CORSIA is applicable only to flights originating from one country to another.

- It will also aid India in meeting its UNFCCC commitments.
- India committed to net zero by 2070 at the 26th Conference of Parties (COP26) to the United Nations Framework Convention on Climate Change.

About LTAG:

- 41st ICAO Assembly adopted LTAG for international aviation of net-zero carbon emissions by 2050 in support of the UNFCCC Paris Agreement.
- LTAG does not attribute specific obligations or commitments in the form of emissions reduction goals to individual States but each state will contribute within its own national timeframe and circumstances.

ARAB LEAGUE

In News: The Arab League voted to reinstate Syria's membership after its suspension more than 10 years ago.



More on the Topic:

- Syria was ousted from the Arab League in 2011 following President Bashar al-Assad's brutal crackdown on pro-democracy protests, which led to the ongoing civil war in the country. The conflict has since killed around half of a million people and displaced about 23 million.
- The Arab League, formally known as the League of Arab States, was established in 1945 with initially just six nations: Egypt, Iraq, Jordan, Lebanon, Saudi Arabia, and Syria. Currently, it has 22 member states, who have pledged to cooperate on economic and military affairs, among other issues.
- It was established in response to concerns about post-war colonial divisions of territory and also strong opposition to emergence of a Jewish state on Palestinian territory.

CHINA-PAKISTAN ECONOMIC CORRIDOR

In News: The China-Pakistan Economic Corridor (CPEC), a part of the Belt and Road initiative, will be extended into Afghanistan.



More on the Topic:

- The move is expected to pave the way for investment of billions of dollars for infrastructure projects in Afghanistan which is hit by sanctions and is facing an economic crisis.
- In Pakistan, Beijing is funding the China-Pakistan Economic Corridor — a package that includes mega projects such as road construction, power plants and agriculture. CPEC, also known as the One Road Project.
- It is part of China's Belt and Road Initiative, a global endeavour aimed at reconstituting the Silk Road and linking China to all corners of Asia.

About CPEC:

- CPEC is a 3,000-km long route of infrastructure projects connecting China's northwest Xinjiang Uygur Autonomous Region and the Gwadar Port in the western province of Balochistan in Pakistan.
- It is a bilateral project between Pakistan and China, intended to promote connectivity across Pakistan with a network of highways, railways, and pipelines accompanied by energy, industrial, and other infrastructure development projects.
- It is aimed to secure and reduce the passage for China's energy imports from the

Middle Eastern countries by avoiding existing routes from the Straits of Malacca between Malaysia and Indonesia, which in case of a war could be blocked and thus hampering the Chinese energy dependent economical avenues.

- In Pakistan, its aim is to overcome an electricity shortfall, infrastructural development and modernize transportation networks.

What India's Concerns Associated with China Pakistan Economic Corridor:

- India firmly and consistently opposes projects involved in CPEC, which are in Indian territory that has been illegally occupied by Pakistan.
- It passes through the Pakistan-occupied Kashmir territory of Gilgit-Baltistan – a claim opposed by Pakistan.
- If CPEC proves a success, it will further consolidate the region's perception as internationally recognised Pakistani territory, diminishing India's claim over the 73,000 sq km piece of land which is home to more than 1.8 million people.
- There are possible Chinese military forces stationed in these areas.

PROJECT DANTAK

In News: The BRO's project DANTAK complet



More on the Topic:

- Project DANTAK was established on 24th April 1961.

- It was a result of the visionary leadership of the third King of Bhutan and then Prime Minister of India Jawahar Lal Nehru.
- DANTAK was tasked to construct the pioneering motorable roads.
- Over the years, the Project has completed approximately 1600 km of blacktopped roads and 120 km of tracks in Bhutan with 5000 meters of bridges over them.
- The medical and education facilities established by DANTAK in far flung areas were often the first in those locations.

KALADAN PROJECT

In News: A vessel containing cement was flagged off from the Syama Prasad Mookerjee Port in Kolkata to officially kick-start the operation of Sittwe Port in Myanmar.



More on the Topic

- The initiative was part of Kaladan Multimodal Transit Transport Project (KMTTP), and was built under grant assistance from India.
- The primary aim of the project has been to create an alternative route to connect northeast and mainland India.
- So far, the narrow Siliguri Chicken's Neck corridor is the only feasible route for transportation.
- Sittwe Port has been developed under a framework agreement between India and Myanmar for the construction and operation of a multimodal transit transport facility on Kaladan river connecting the port with Mizoram.
- Inland Waterways Authority of India (IWAI) is the Project Development Consultant for KMTTP.

The project envisaged four important stages:

- Kolkata to Sittwe waterway;
- Sittwe to Paletwa inland (River Kaladan) waterway;
- Paletwa to India-Myanmar border post in Myanmar;
- Finally, linking the road to Lawngtlai in Mizoram as part of the project's last leg;

Importance of Better connectivity to North Eastern States:

- Shorter journeys mean lower transport costs, which in turn will have multiplier economic effects .
- Industrial development and harnessing of tourism potential that will help in socio-economic development and employment generation.
- The connectivity is important for strategic reasons. As Siliguri Corridor is the only access to North East, the alternative short access will help to maintain the connectivity even when Siliguri is blocked.

WASHINGTON DECLARATION

In News: South Korean President arrived in the U.S. to commemorate the 70th anniversary of U.S.-South Korea bilateral relations. A high-light of the visit was the signing of the "Washington Declaration" as a nuclear deterrence strategy.



More on the Topic:

- According to the declaration, an American nuclear ballistic submarine would be deployed in the Korean peninsula; a nuclear consultative group would be formed to formulate principles of joint response tactics;
- South Korea would receive Intel from the U.S. regarding nuclear advancements; and the U.S. will strengthen South Korea's nuclear deterrence capabilities through joint military training programs and an

annual intergovernmental simulation.

- The declaration reaffirmed the **non-proliferation Treaty** implying that South Korea would not venture into the creation of its own independent nuclear capabilities and would instead focus on deterrence measures through an alliance-based approach.
- It also mandates the U.S. President as the only 'sole authority' to use the nuclear arsenal of the U.S. in the event of a nuclear confrontation.
- While the existence of the agreement is based on the security needs of South Korea, the policy reflects big power politics where the interests of the larger power (U.S.) takes precedence.

ORGANISATION OF ISLAMIC COOPERATION (OIC)

In News: The Ministry of External Affairs has hit out at the Organisation of Islamic Cooperation (OIC), terming its comments on the recent violence during the Ram Navami processions in different parts of the country, as a reflection of its "communal mindset".



More on the Topic:

- The Organisation of Islamic Cooperation, formerly the Organisation of the Islamic Conference, is an intergovernmental organization founded in 1969, consisting of 57 member states, with 48 being Muslim-majority countries.
- Its official languages are Arabic, English and French.
- The membership spans roughly 1.81 billion people.
- The organisation was set up to safeguard

and protect the interests of the Muslims in the world and also to promote international peace and harmony among various people of the world.

INDIA BHUTAN RELATIONS

In News: His Majesty Jigme Khesar Namgyel Wangchuck, the King of Bhutan called on the President of India, Smt Droupadi Murmu at Rashtrapati Bhavan recently.



More on the Topic:

- Diplomatic relations between India and Bhutan were established in 1968.
- The basic framework of India- Bhutan bilateral relations is the **Treaty of Friendship and Cooperation** signed in 1949 between the two countries and revised in February 2007.
- Government of India has consistently supported the socio-economic development of Bhutan. Hydro-power cooperation between the two countries is an example of win-win cooperation.
- The 720 MW Mangdechhu, 1200 MW Punatsangchhu-I, 1020 MW Punatsangchhu-II in Inter-Governmental modes are under various stages of implementation.
- India continues to be the principal development partner of Bhutan. For the 12th Five Year Plan, India's contribution of Rs. 4500 cr. will constitute 73% of Bhutan's total external grant component.
- India is Bhutan's largest trading partner.
- In 2020, bilateral trade accounted for 82.6% of Bhutan's total trade.
- A 2,000 strong Indian Military Training Team (IMTRAT) is permanently based in western Bhutan to train the Royal Bhutan Army, while other units regularly cooperate

with the Royal Bhutan Army.

Significance of India Bhutan Relations:

- Bhutan shares Assam, Arunachal Pradesh, West Bengal and Sikkim.
- Security of Bhutan's present borders, especially its western border, is very important for India
- Bhutan serves as a buffer between India and China.
- Bhutan provides a market for Indian commodities and is a destination for Indian investment.
- Bhutan is a rich source of hydropower.

Challenges:

- China's continuous claims to important border areas such as Chumbi valley and Doklam and its continuous efforts for establishing strong diplomatic and economic relations with Bhutan have been continuous source of concern for India.
- At times India has been accused of meddling in Bhutan's internal affairs.
- A politically unstable and restive Bhutan can provide a safe haven to anti-India activities and anti-India militant groups.

NATO

In News: Finland has joined NATO recently, marking a definitive shift in Europe's post World War II alignment and isolating Russia further.



More on the Topic

- To join the US-led North Atlantic Treaty Organisation (NATO), the small Nordic country, which shares a 1,340-km border with Russia, has ended more than 70 years of military non-alignment.
- In the Cold War years, a policy of neutrality

between the Soviet Union and the West was known as 'Finlandisation', and Finlandisation had been one of the options discussed for Ukraine before Russia invaded it.

Why has Finland joined NATO?

- Russia going to war against Ukraine has made its smaller neighbours crave the powerful military backing the NATO offers, under whose charter, every member has to defend any one member being attacked.
- Finland and its neighbour Sweden applied for NATO membership soon after the Russian invasion of Ukraine.
- Any new applicant has to be approved by all existing members of the alliance, and while Finland is now the 31st NATO member, Sweden's bid is being held up by Turkey and Hungary.

Significance of Finland joining NATO:

- For Finland, while the country is in a better position in terms of security, it is losing out on the significant trade and tourist revenue it was making from Russia, and from its position as the West's gateway to the East.
- For NATO, the addition of Finland brings in a military trained to repel an attack from Russia, and, by doubling its border with the country, brings it in a better position to station weapons, including missile launchpads, closer to Russia.
- For Russia, Finland's move has brought NATO closer to its doors, the very thing it most strenuously opposes, and the prevention of which it had cited as one of the reasons to invade Ukraine.

About NATO:

- NATO was set up after World War II with the express purpose of containing the Soviet Union.
- The members of the alliance include: since 1949, the 12 founding countries of Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom and the United States; Greece and Türkiye joined in 1952; Germany in 1955; Spain in 1982; Czechia, Hungary and Poland in 1999; Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia and Slovenia joined in 2004; Albania and Croatia in 2009; Montenegro in 2017; North Macedonia in 2020; and

finally, Finland.

GEOGRAPHY

ASEAN-INDIA MARITIME EXERCISE (AIME) 2023

In News: India sent INS Satpura and INS Delhi to participate in the first ever ASEAN- India Maritime Exercise (AIME 2023) scheduled from 02 to 08 May 2023.



Image: ASEAN

More on the Topic:

- Scientists have urged the Odisha government to immediately come up with a robust protection mechanism before the living fossil becomes extinct due to destructive fishing practices.
- The exercise aims to strengthen India's military cooperation with the Association of Southeast Asian Nations (ASEAN).
- The exercise will take place in Singapore and the South China Sea.

CYCLONE

In News: The Indian Meteorological Department, IMD has issued a warning that a cyclonic circulation is likely to develop over the South-east Bay of Bengal.



More on the Topic:

- Cyclones are centres of low pressure surrounded by closed isobars and have increasing pressure outwards.
- As air enters an area of low pressure from all directions, the Coriolis Effect bends the direction of the wind to the right of its path.
- This creates a counterclockwise rotation around the low and convergence near the centre of the system.
- As the air collides near the centre it is forced aloft where divergence takes air away from the centre of the system.
- A Cyclone is a system of low level convergence and high level divergence with a rising column of air in the centre of the rotating air mass. If the upper air is not diverging then there cannot be a cyclone present.

Types of Cyclones:

Temperate cyclones:

- They are caused in middle and high latitudes, As India Not lies here it does not occur in India.

Tropical cyclones:

- Tropical cyclones are violent storms that originate over oceans in tropical areas and move over to the coastal areas.

- It brings large-scale destruction caused by violent winds, very heavy rainfall and storm surges.
- The winds blow counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.
- Tropical cyclones usually develop in summer season in the vicinity of Inter-Tropical Convergence Zone (ITCZ) over warm ocean surface.
- Tropical cyclones are one of the mechanisms by which surface heat energy is redistributed from the equator to the poles.

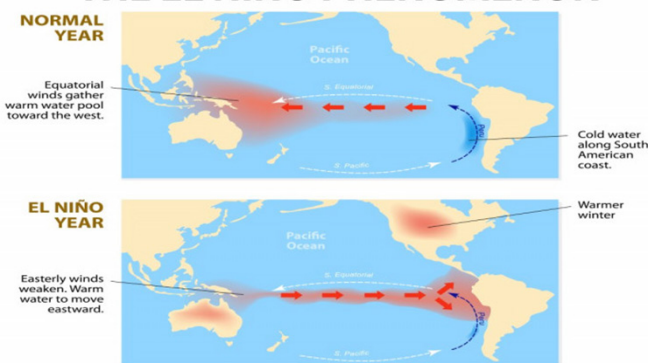
It's name varies location to location.

- They are known as
- Cyclones in the Indian Ocean
- Hurricanes in the Atlantic
- Typhoons in the Western Pacific and South China Sea, and,
- Willy-willies in the Western Australia.

EL NINO

In News: World Meteorological Organization (WMO) informed that there is a 60 % chance of an El Nino developing during May-July 2023.

THE EL NIÑO PHENOMENON



More on the Topic

- El Nino is the warmer phase of the El Niño-Southern Oscillation (ENSO) phenomenon.
- Together, La Nina and El Nino are cold (La Nina) and warm (El Nino) phases of El Niño-Southern Oscillation (ENSO).
- El Niño It is associated with warming of the ocean surface temperatures in the central and eastern tropical Pacific Ocean.
- It occurs on average every two to seven years, and the episodes usually last nine to 12 months.
- The El Nino years are usually hotter and are

marked by heatwaves, droughts as well as rainfall in several parts of the world.

Impact of El Niño on Different Continents:

- In parts of southern South America, the United States, the Horn of Africa and central Asia, for instance, the climatic condition leads to increased rainfall.
- But in Australia, Indonesia and parts of southern Asia, it can result in severe droughts.

Financial Impact of El Niño on India:

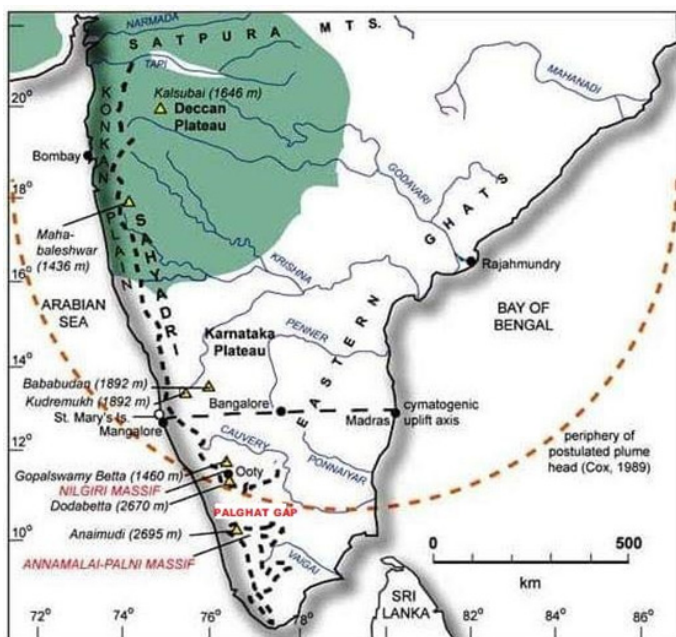
- **Agriculture:** El Nino can also cause dry, inadequate monsoons in the summer and mild weather over the Indian subcontinent in the winter.
- As a result, it affects agriculture and results in a situation similar to a drought. Crops including peanuts, maize, guar, castor, moong, tur, and many more suffer greatly under El Nino conditions.
- **Economy:** There will be food inflation as the drought condition increases the prices.
- **Electricity generation and Consumption:** Reduced rainfall affects electricity production. Increased temperature increases electricity consumption.

Challenges:

- Smart cities function as special purpose vehicles diverged from regular urban governance structures.
- It can create islands of development rather than an inclusive all round development of the city.
- Although India's Smart Cities Mission has identified more than 20 priority areas, interventions by the respective agencies are weak.
- There is an inadequate emphasis on the functioning of urban local bodies.
- The Area Based Development approach – development of a sewage system somewhere or a web of roads in another city – will cover just about three % of the urban areas associated with these smart cities.
- Urban local bodies lack both technical and human capacity and professionalism.

THE PALGHAT GAP

In News: Often called as a significant discontinuity in the Western Ghats, the Palghat Gap is about 40 km wide, with the steep Nilgiris and Anamalai hills, both rising above 2,000 m, on either side.



More on the Topic:

- The Palghat Gap has historically been important as a significant gateway into the State of Kerala.
- It is a corridor for both roads and railways that connects Coimbatore with Palakkad. The Bharathapuzha river flows through it.
- In contrast to the tropical rainforests of the Western Ghats, the vegetation in the Palghat Gap is classified as dry evergreen forest.
- It also marks a divide in the flora and fauna of the region. For example, several species of frogs are found only on one side of the Gap.

Origin of the Gap:

- The Gap is a geological shear zone that runs from east to west. Shear zones are weak regions in the earth's crust – this is the reason why tremors are sometimes felt in the region Coimbatore.
- The origin of the Palghat Gap also stems from the drift of continental shelves after Australia and Africa broke off from the Gondwana landmass.
- India and Madagascar remained as one landmass until large-scale volcanic activity split the two, the split occurring where the Palghat Gap is located – this is mirrored in the Ranotsara Gap on the eastern face of

Madagascar.

ACHANAKMAR WILDLIFE SANCTUARY

In News: A tigress that had been captured after it killed two persons and injured another in Chhattisgarh's was recently released into Achanakmar Tiger Reserve.

More on the Topic:

- Achanakmar Wildlife Sanctuary is a sanctuary in Mungeli district of Chhattisgarh and in the Anuppur and Dindori districts of Madhya Pradesh in India.
- It was established in 1975, under the provisions of the Indian Wildlife Protection Act of 1972, and declared as a Tiger Reserve under Project Tiger, in 2009.
- It is a part of the Achanakmar-Amarkantak Biosphere Reserve.
- Maniyari river flows right through the heart of the reserve.
- The vegetation belongs to Tropical moist deciduous forest.

MOUNT ETNA

In News: Europe's most active volcano Mount Etna has erupted recently.



More on the Topic:

- Mount Etna is in an almost constant state of activity and it's considered a United Nations Educational, Scientific and Cultural Organization

World Heritage Site.

- It lies above the convergent plate margin between the African Plate and the Eurasian Plate.
- The volcano's height increased by over 30 metres following a six-month period of activity.
- It is the tallest active volcano in Europe.
- It is located on the island of Sicily, Italy.

ANJI-KHAD RAIL BRIDGE

In News: The Anji-Khad rail bridge, India's first cable-stayed rail bridge, is ready.



More on the Topic:

- The first bridge of its kind is made of 96 cables in total. Anji-Khad rail bridge will connect Katra to Reasi in Jammu and Kashmir.
- The bridge has been made using cutting-edge technology and is designed to withstand harsh weather conditions. The new bridge will help boost the country's economic growth and tourism industry.
- The bridge spans over the **Anji River, a tributary of the Chenab River**, at a height of 196 meters above the river bed.
- The Anji River and the Chenab River are two important tributaries of the Indus River system.
- The Anji River originates in the Himalayas and flows through the Indian states of Himachal Pradesh and Punjab before joining the Chenab River near Akhnoor.
- The Chenab River is formed by the confluence of the Chandra and Bhaga rivers in the Lahaul and Spiti districts of Himachal Pradesh.

DISASTER MANAGEMENT

CONFERENCE ON DISASTER RESILIENT INFRASTRUCTURE (ICDRI)

In News: The CDRI is hosting the fifth edition of the International Conference on Disaster Resilient Infrastructure (ICDRI) in New Delhi.

More on the Topic:

- This event aims to bring "solutions integrating resilience in infrastructure to ensure access, delivery and continuity of essential services to people and communities".
- Disaster resilient infrastructure include vital buildings, public communal facilities, transit systems, telecommunications, and power systems that are strategically designed to withstand the impact of a natural disaster like a flood, earthquake, or wildfire.
- Disaster resilient architecture is one of the pivotal aspects of risk management and disaster preparedness.

Significance of Disaster Resilient Infrastructure:

- According to the Sendai Framework for Disaster Risk Reduction (SFDRR), upgraded disaster resilience of infrastructure is a foundation for sustainable development.
- Building an infrastructure system that is resilient to disasters is vital for economic growth with sustainable development.
- While India has been hailed for its reduction in the number of human casualties in disasters, the country lags behind in protecting property and infrastructure during natural disasters or extreme weather events.
- The World Bank calculated that the economic losses due to disasters during the late 90s and early 2000s were close to 2% of the GDP.

About Coalition of Disaster Resilient Infrastructure (CDRI):

- The Coalition for Disaster Resilient Infrastructure (CDRI) is a partnership of national governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and knowledge institutions that aims to promote the resilience of new and existing infrastructure systems to climate and disaster risks in support of sustainable development.
- India announced the creation of a CDRI after

the Asian Ministerial Conference on Disaster Risk Reduction (2016)

- **Infrastructure Resilience Accelerator Fund** was announced in 2023 acts as a financial resource and is key to the success of initiatives
- Webb's observations revealed **two additional rings nearer the star** – a bright inner one and a narrow intermediate one.
- These three belts appear to be **populated by objects called planetesimals**, some of which are thought to join together early in a star system's history to form planets while others remain as debris like asteroids and comets.
- Dust around stars contains **elements such as carbon and iron which can help form planetary systems.**

About Fomalhaut:

- Fomalhaut, one of the brightest stars in our night sky and the brightest in the southern constellation Piscis Austrinus, is located 25 light years from Earth.
- A light year is the distance light travels in a year, 5.9 trillion miles (9.5 trillion km).
- Fomalhaut is **16 times more luminous than the sun and almost twice as massive.**
- It is about 440 million years old – less than a tenth the age of the sun – but is probably nearly halfway through its lifespan.

About James Webb Space Telescope (JWST):

- The James Webb Space Telescope is a space telescope currently conducting infrared astronomy.
- As the largest optical telescope in space, it is equipped with high-resolution and high-sensitivity instruments, allowing it to view objects too old, distant, or faint for the Hubble Space Telescope.
- The telescope is the result of **an international collaboration between NASA, the European Space Agency (ESA) and the Canadian Space Agency** which was launched in December 2021.
- It can **see backwards** in time to just after the Big Bang by looking for galaxies that are so far away that the light has taken many billions of years to get from those galaxies to our telescopes

SCIENCE AND TECHNOLOGY

SUPER COMPUTERS

In News: According to the Ministry of Earth Sciences (MoES), India is set to dramatically scale up its super-computing prowess and install an 18-petaflop system over the course of this year.

More on the Topic:

- Flops (floating point operations per second) are an **indicator of computers processing speed and a petaflop refers to a 1,000 trillion flops.**
- Processing power to such a degree greatly eases complex mathematical calculations required, for among other things, forecasting how the weather will be over the next few days all the way up to two-three months ahead.
- Currently India's most powerful, civilian supercomputers – Pratyush and Mihir – with a combined capacity of 6.8 petaflops are housed at the Indian Institute of Tropical Meteorology (IITM), Pune, and the National Centre for Medium Range Weather Forecasting (NCMRWF), Noida, respectively.
- They were made operational in 2018 at an investment of Rs.438 crore. Both these organisations are affiliated to the MoES.
- **National Computing Mission of India envisages empowering national academic and R&D institutions** spread over the country by installing a vast supercomputing grid comprising more than 70 high-performance computing facilities.

About Supercomputer:

- A supercomputer is a computer that performs at or near the currently highest operational rate for computers.
- Supercomputers have certain distinguishing features.
- Unlike conventional computers, they usually have more than one CPU (central processing unit), which contains circuits for interpreting program instructions and executing arithmetic and logic operations in proper sequence.
- Generally, PETAFLOP is a measure of a Supercomputer's processing speed and can be expressed as a thousand trillion floating point operations per second.

- The fastest high-performance computing system in the world is currently the **Frontier-Cray system** at Oak Ridge National Laboratory, United States.
- This has a peak speed of 1 exa-flop (or about 1,000 petaflops). The top 10 other systems, based on speed, range from about 400 petaflops to 60 petaflops.

CALCIUM-41 FOR RADIOMETRIC DATING

In News: Carbon-14 has a half-life of 5,700 years, so the technique can't determine the age of objects older than around 50,000 years. In 1979, scientists suggested using calcium-41, with a half-life of 99,400 years, instead.



More on the Topic:

- Calcium-41 is produced when cosmic rays from space smash into calcium atoms in the soil.
- It is found in the earth's crust, opening the door to dating fossilised bones and rock.

What is radiometric dating?

- When an organic entity is alive, its body keeps absorbing and losing carbon-14 atoms.
- When it dies, this process stops and the extant carbon-14 starts to decay away.
- Using the difference between the relative abundance of these atoms in the body and the number that should've been there, researchers can estimate when the entity died.
- A significant early issue with carbon dating was to detect carbon-14 atoms, which occur once in around 10-12 carbon atoms. Calcium-41 is rarer, occurring once in around 10-15 calcium atoms.

New Techniques:

- Atom-trap trace analysis (ATTA) is projected as a solution.

- ATTA is sensitive enough to spot Calcium-41 atoms; specific enough to not confuse them for other similar atoms; and fits on a tabletop.
- In an atom, an electron in one orbital can transition to the next if it's given a specific amount of energy; then it jumps back by releasing that energy.
- In ATTA, a laser's frequency is tuned such that it imparts the same energy as required for an electron transition in calcium-41.
- The electrons absorb and release this energy, revealing the presence of their atoms.
- The researchers reported being able to spot one calcium-41 atom in every 10¹⁶ calcium atoms with 12% precision in seawater.

ASTR

In News: The Department of Telecommunications (DoT) has developed an artificial-intelligence-based facial recognition tool that it claims has the capability of running checks on subscriber databases of telecom operators to deduce whether it contains multiple connections associated with the same person.



More on the Topic:

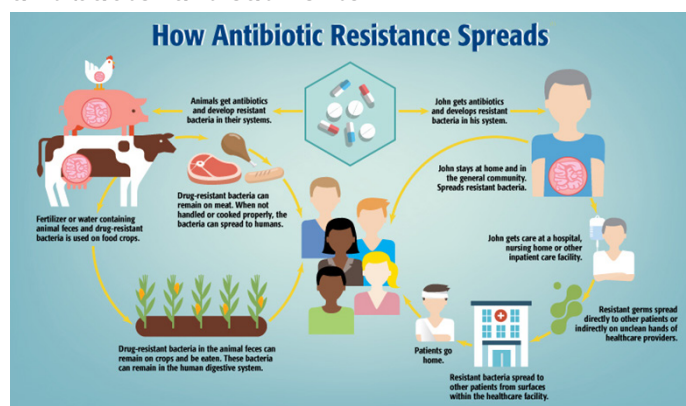
- Artificial Intelligence and Facial Recognition powered Solution for Telecom SIM Subscriber Verification (ASTR) — can potentially bring down cyber frauds by detecting and blocking possible fraudulent mobile connections.
- Human faces in subscribers' images are encoded using convolutional neural network (CNN) models in order to account for the tilt and angle of the face, opaqueness and dark colour of the images.
- After that, a face comparison is carried out for each face against all faces in the database,

and similar faces are grouped under one directory. Two faces are concluded to be identical by ASTR if they match to the extent of at least 97.5 %.

- ASTR is capable of detecting all SIMs against a suspected face in less than 10 seconds from a database of 1 crore images.

ANTIMICROBIAL RESISTANCE

In News: WHO, in partnership with the Global AMR R&D Hub, has released a report for G7 Finance and Health Ministers detailing progress on incentivizing the development of new antibacterial treatments.



More on the Topic:

- The new WHO report (Incentivising the Development of new antibacterial treatments 2023) highlights progress in addressing antimicrobial resistance (AMR) but also identifies gaps in ensuring a robust pipeline of antibiotic treatments.

About Antimicrobial Resistance:

- Antimicrobial resistance (AMR) refers to the ability of microorganisms, such as bacteria, viruses, fungi, and parasites, to withstand the effects of drugs that were previously effective in treating infections caused by them.
- In simple terms, it means that the microorganisms become resistant to the drugs, rendering them less effective or completely ineffective in fighting infections.

Why AMR is a threat:

- AMR is a growing global health concern because it limits the effectiveness of existing antimicrobial drugs, leading to longer durations of illness, increased healthcare costs, and higher mortality rates.
- Some common examples of antimicrobial drugs include antibiotics, antivirals, antifungals, and antiparasitic medications.

Factors contributing to the development and spread of antimicrobial resistance:

- **Overuse and misuse of antimicrobial drugs:** For example, prescribing antibiotics for viral infections or using them as growth promoters in animals.
- **Poor infection prevention and control practices:** Inadequate hygiene measures in healthcare settings, improper sanitation, and poor infection control practices contribute to the spread of resistant microorganisms.
- **Lack of new drug development:** There has been a decline in the discovery and development of new antimicrobial drugs, which limits treatment options against resistant infections.

Way Ahead:

- **Promoting appropriate antimicrobial use:** Encouraging rational and evidence-based use of antimicrobial drugs in both humans and animals can help slow down the development of resistance.
- **Enhancing infection prevention and control.**
- **Supporting research for the discovery of new antimicrobial drugs and alternative treatments,** as well as diagnostic tools, is crucial to combat AMR.
- **Establishing surveillance systems** to monitor the occurrence and spread of antimicrobial resistance.
- **Raising awareness about AMR,** its causes, and prevention.
- **Cooperation among countries, organizations, and stakeholders** is essential to address AMR on a global scale, as resistant microorganisms can spread across borders.

LIGO PROJECT

In News: PM has laid the foundation stone of the LIGO Project.

More on the Topic:

- **Laser Interferometer Gravitational-Wave Observatory or LIGO** is a global network of laboratories that can detect gravitational waves, which are tiny ripples in the fabric of space and time.
- **LIGOs have detectors designed to look for these tiny cosmic ripples.** For instance, the LIGO detectors can pick up a change of distance that is several times smaller than a proton.

- So far, there are four such facilities in the world.
- There are two LIGOs in Washington State and Louisiana in the US. The one in Italy is called Virgo. The fourth one, named Kamioka Gravitational-Wave Detector (KAGRA), is in Japan.

What causes gravitational waves?

- Gravitational waves are caused by some of the most violent events in the universe involving massive objects in motion, such as merging neutron stars or black holes, or exploding stars.
- **Albert Einstein has first predicted the existence of gravitational waves soon after formulating the theory of General Relativity in 1915.**
- Gravitational waves can help expand our understanding of the universe.
- **LIGO detected gravitational waves for the first time in 2015.** Two black holes, 29 and 36 times the mass of the sun, merged 1.3 billion years ago to produce those waves.
- The scientists involved in the project – Rainer Weiss, Barry C Barish, and Kip S Thorne – won the Nobel Prize in Physics in 2017.
- The detection confirmed Einstein's theory that space and time are not distinct entities but are **woven together in a fabric-like structure that curves, stretches, and even warps, because of gravity waves created by massive objects moving at high speeds.**
- Since then, LIGO and its partner observatory Advanced Virgo (the facility in Italy) have detected more than 50 such signals.

How the LIGO observatory work:

- The LIGO detectors comprise two 4-km-long L-shaped interferometers, which are essentially vacuum chambers about 4 ft in diameter with mirrors at the end.
- Light rays are released simultaneously in both chambers. The rays split into two beams traveling back and forth down the arms.
- The light should return at the same time in both chambers. However, if a gravitational wave passes through, there is a change in the length – smaller than one-ten-thousandth the diameter of a proton – which the LIGO detectors can pick up.

INDIA'S NUCLEAR POWER JOURNEY

In News: India successfully conducted three nuclear bomb test explosions at the testing site in Pokhran on May 11, 1998. While these tests caused an international outcry at the time, they cemented India's status as a nuclear power.



More on the Topic:

- India's nuclear programme can be traced to the work of physicist Homi J Bhabha.
- In 1945, after Bhabha's successful lobbying of India's biggest industrial family, the Tata Institute of Fundamental Research was opened in Bombay. TIFR was India's first research institution dedicated to the study of nuclear physics.
- After Bhabha's perusal then government has established the Department of Atomic Energy (DAE) in 1954, with Bhabha as director.
- **The War Effects:** A pivotal moment in India's nuclear journey came after it suffered a crushing defeat in the 1962 Sino-Indian War and China's subsequent nuclear bomb test at Lop Nor in 1964.
- In 1965, India went to war with Pakistan once again, with China openly supporting Pakistan this time.
- **International Dynamics:** After China successfully tested its own bomb, there was increasing international consensus among the big powers regarding the need for a non- proliferation treaty.
- In 1968, the Non-Proliferation Treaty (NPT) came into existence. The treaty defines nuclear-weapon states as those that have built and tested a nuclear explosive device before January 1, 1967 – the US, Russia (formerly USSR), the UK, France and China – and effectively disallows any other state from acquiring nuclear weapons. While the treaty has been signed by almost every country in the world, India is one of the few non- signatories.
- **Pokhran-I and its aftermath:** By the 1970s,

India was capable of conducting a nuclear bomb test. Bhaba's successor at the DAE, Vikram Sarabhai, had worked to significantly broaden India's nuclear technology.

- On May 18, 1974, India carried out its first nuclear test at the Pokhran test site. Pokhran-I, code named Operation Smiling Buddha, would be billed as a "peaceful nuclear explosion", with "few military implications".
- There was near-universal condemnation and countries like the US and Canada imposed significant international sanctions on India.
- **The culmination:** In March 1998, Pakistan launched the Ghauri missile – built with assistance from China. Two months later, India responded with Operation Shakti.
- While the 1974 tests were ostensibly done for peaceful purposes, the 1998 tests were the culmination of India's nuclear weaponisation process.
- Consequently, the Indian Government declared itself as a state possessing nuclear weapons following Pokhran-II.
- While the tests in 1998 also invited sanctions from some countries (like the US), the condemnation was far from universal like in 1974.
- In context of India's fast-growing economy and market potential, India was able to stand its ground and thus cement its status as a dominant nation state.

ANTI-SPYWARE DECLARATION

In News: The US and 10 other nations issued the first-ever significant anti-spyware declaration.



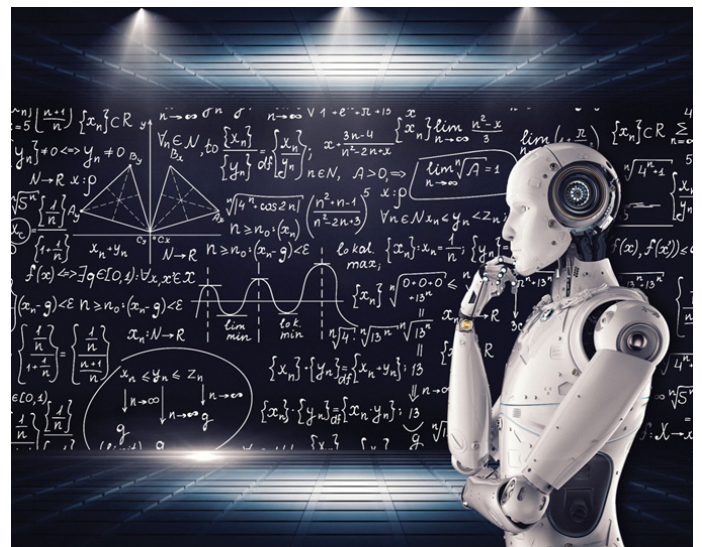
More on the Topic:

- It recognized the threat posed by the misuse of commercial spyware.

- It seeks to realize the importance of stringent domestic and international controls on the proliferation and use of this technology.
- **Spyware is a type of malicious software or malware that is installed on a computing device without the end user's knowledge.**
- Due to the fact that many countries' intelligence and law enforcement agencies require such tools to combat terrorism, organised crime, and drug lords, nations had been unwilling to take a firm stance against spyware up until now.
- Too often, such powerful and invasive tools have been used to target and intimidate perceived opponents and facilitate efforts to curb dissent; limit freedoms of expression, peaceful assembly, or association; enable human rights violations and abuses or suppression of civil liberties; or track or target individuals without proper legal authorisation, safeguards, or oversight.

IMMINENT CHALLENGES AND THE FUTURE OF ARTIFICIAL INTELLIGENCE

In News: Sam Altman, CEO of OpenAI, the startup behind the sensational AI chatbot ChatGPT, testified before the US congress on the imminent challenges and the future of AI technology.



More on the Topic:

The Moment's on Social Media:

- The regulatory bodies have failed to regulate social media realising its potential threats at the beginning of its inception period.
- Realising this there is a need for understanding and regulating AI from its potential threat to societies.

Invention of AI - An atom bomb or printing press moment?

- AI has the potential to improve nearly every aspect of our lives. In this perspective AI can be a printing-press moment.
- If AI technology goes wrong, it can go quite wrong. It will cause significant harm to the world. In this perspective AI invention is an Atom bomb moment.

AI and Jobs:

- Other AI models do excel at completing tasks but are not capable at completing a full job yet.
- Some jobs will transition away due to AI.
- AI may automate some jobs, it can also create new and better ones.

Need to Regulate AI:

- Regulating the AI that would maximise the benefits of the transformative technology while minimising the harms.
- Government must consider licensing and testing requirements of development and release of AI models.
- Companies like OpenAI should be **independently audited**. "For a very new technology we need a new framework."

BLUEBUGGING

In News: Andhra Pradesh police have cautioned the smartphone users to be aware of Blue bugging.

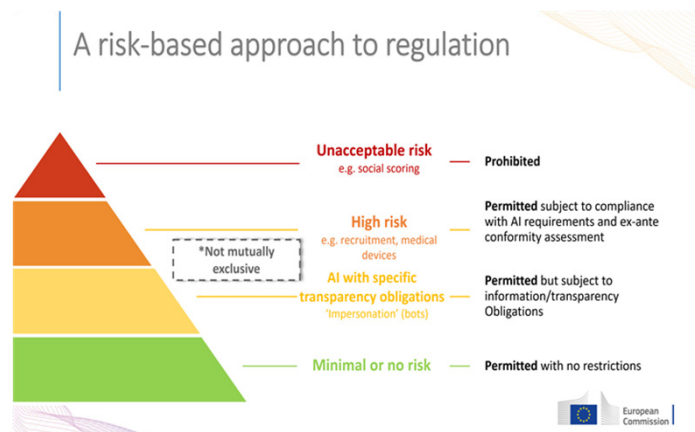


More on the Topic:

- Bluebugging is a hacking technique that allows individuals to access a device with a discoverable Bluetooth connection.
- Once the target device accesses a rigged link, the attacker can take full control of it.
- The hacker can read and send messages, access the victim's phonebook, and initiate or eavesdrop on phone calls.

RISK-BASED REGULATION FOR ARTIFICIAL INTELLIGENCE (AI)

In News: Group of Seven advocated that nations should adopt "risk-based" regulation on artificial intelligence.



More on the Topic:

- G7's "risk-based" approach could involve **graded regulation, with a lesser compliance burden on developers or users of AI tool deployed in areas** such as the word processing business or generating music, as compared to the regulatory supervision on, say, a tool aiding doctors in medical diagnosis or one linked to a face-reading device that's matching people's identities.

Significance of the Move:

- As AI technologies expand and adapt at a rapid pace, **nations are collaborating on designing reasonable policies** that balance innovation with privacy, security, and ethical issues.
- The accord establishes a precedent for how big countries will control AI in the face of privacy and security concerns.

AI Challenges Which Should be Addressed by the Governments:

- Protecting users from **unsafe or ineffective systems**;
- Protecting users against **discrimination by algorithms**. AI can be trained on biased data. This will further create biased data.
- Users being protected against **abusive data practices** via built-in protections, and having agency over the use of their data; (There is a risk that personal and sensitive information data could be used for unethical purposes) users knowing that an automated system is being used, and comprehending how and why it contributes to outcomes that impact them;

- Users are able to opt out, and have access to a person who can quickly consider and remedy problems.
- **Address the issue of fixing responsibility.** AI may generate fake news or other malicious content, without knowing who is responsible for the output.
- **The issue of Accountability.** There are concerns about who should be held responsible for the actions of AI systems – creators of the AI systems, the companies that deploy them, or the governments that regulate them.

Way Ahead:

- It's critical to design AI in such a way that it understands the **social implications of how it responds and respects human emotions and feelings.**
- Designing AI systems and certifying AI algorithms that **clearly explain decision-making operations** is essential to avoid customer dissatisfaction or disappointment and enable accountability and scrutiny.
- Thus, companies must design algorithms that **communicate AI policies on bias and offer a transparent explanation of when the problem occurs.**
- Thus, designing, developing, and deploying **fair and non-discriminatory AI systems** that ensure inclusiveness is essential and one of the key principles of AI governance.
- Organizations must **regulate their Machine Learning (ML) training data and evaluate its impact to detect bias** that may be unintentionally present or introduced within the system.
- AI development and deployment should come with **clear lines of accountability and responsibility** for any adverse outcome resulting from their use.

NORTHERN LIGHTS (AURORA BOREALIS)

In News: Indian Astronomical Observatory captured the phenomenon of Northern Lights in Ladakh for the first time.

More on the Topic:

- The Northern Lights are actually the result of collisions between gaseous particles in the Earth's atmosphere with charged particles released from the sun's atmosphere. Variations in colour are due to the type of gas particles that are colliding.

- Auroras are mostly seen in **high-latitude regions near the Arctic and Antarctic circles**, about 66.5 degrees north and south of the equator.
- It is extremely rare to witness this phenomenon at such low latitudes in India.
- It occurs when incoming charged particles from the sun strike oxygen and nitrogen and interact with **earth's magnetosphere.**
- Although most of the particles are blocked by the magnetosphere, some of the ions become trapped ring-shaped around the planet and are seen as Northern lights.

THE THIRD-GEN WEB

In News: 2021 report by the U.S.- India Strategic Partnership Forum states that the third-gen web will be crucial for India to realise its \$1.1 trillion digital asset opportunity by 2032.



More on the Topic:

- World Wide Web is a collection of websites or web pages stored in web servers and connected to local computers through the internet.
- "Web3" and "Web 3.0" are two terms used interchangeably to refer to the third generation of the internet.
- For some experts, Web3 is decentralised, privacy-oriented, blockchain-driven and crypto-asset friendly; while Web 3.0 upholds the property of the 'semantic web,' which is powered by Artificial Intelligence (AI).
- Web3 seeks to radically transform the manner in which data is generated, monetised, shared and circulated.

- Web3 seeks to overcome the data storage barriers of blockchains.

How can India benefit from Web 3?

- **Protecting Intellectual property:** India's handicraft industry is renowned for design-related innovations, many of which are not protected by Intellectual Property rights. The digital tokens minted by Web 3 platforms would enable our handicraft enterprises to secure their innovations.
- **Community Data Utilisation:** India's major digital public infrastructure push and the large-scale deployment of Internet of Things (IoT) in rural development projects offer major possibilities for deploying Web 3 in rural areas.
- The Atal Bhujal Yojana is an important source of data on groundwater utilisation practices and aquifer contamination, although this resource remains largely untapped for want of data analytics capabilities at the community level. This limitation can be overcome by Web3's (decentralised) analytics systems. Web 3.0 can also yield insights from large volumes of community data.
- **Disaster Management:** Early warning systems for floods will improve with Web 3.0 due to data analytics facilities being obtained at the sub-basin level. Thus Web 3.0 will have a transformative role in regionally disadvantaged areas.
- **Creation of distributed economic system:** Native digital tokens, Central Bank Digital Currency and cryptocurrencies would be used for monetary circulation, making the transaction fast, traceable and effortless.

HYDROGEN SULPHIDE

In News: Human lives were lost due to Hydrogen Sulphide gas leak.



More on the Topic:

- Inhaling high concentrations of hydrogen sulphide, or H₂S, which smells of rotten eggs, gas can lead to rapid unconsciousness and death.
- It is a highly toxic, colourless and flammable gas.
- Because it is heavier than air, it tends to accumulate at the bottom of poorly ventilated spaces.
- It is a central participant in the sulphur cycle, the biogeochemical cycle of sulphur on Earth.
- It occurs naturally in crude petroleum, natural gas, and hot springs.

DIGITAL SERVICES ACT

In News: The European Union (EU) has confirmed the names of 19 platforms that will be subject to its Digital Service Act.



More on the Topic

- Five subsidiaries of Google's parent Alphabet, two Meta units, two Microsoft businesses, Apple's AppStore, Twitter, and Alibaba's AliExpress are among the entities that the EU has identified.
- The rules notified under the Digital Services Act (DSA), aim at overhauling the EU's social media and e-commerce rules, and at tightly regulating the way big technology platforms moderate user content.

Key features of the Digital Services Act:

- **Faster removals and provisions to challenge:** As part of the overhaul, social media companies will have to add "new procedures for faster removal" of content deemed illegal or harmful. They will also have to explain to users how their content takedown policy works.

- **Bigger platforms have greater responsibility:** The legislation does not subscribe to a one-size fits all approach, and places increased accountability on the Big Tech companies.
- Under the DSA, 'Very Large Online Platforms' (VLOPs) and 'Very Large Online Search Engines' (VLOSEs) – that is, platforms having more than 45 million users in the EU, will have more stringent requirements.
- **Direct supervision by the European Commission:** These requirements and their enforcement will be centrally supervised by the European Commission itself.
- **More transparency on how algorithms work:** VLOPs and VLOSEs will face transparency measures and scrutiny of how their algorithms work, and will be required to conduct systemic risk analysis and reduction to drive accountability about the society impacts of their products.
- VLOPs must allow regulators to access their data to assess compliance and allow researchers to access their data to identify systemic risks of illegal or harmful content.
- **Clearer identifiers for ads and who's paying for them:** Online platforms must ensure that users can easily identify advertisements and understand who presents or pays for the advertisement.

Indian Online Laws:

- In February 2021, India had notified extensive changes to its social media regulations in the form of the Information Technology Rules, 2021 (IT Rules) which placed significant due-diligence requirements on large social media platforms such as Meta and Twitter.
- These included appointing key personnel to handle law enforcement requests and user grievances, enabling identification of the first originator of the information on its platform under certain conditions, and deploying technology-based measures on a best-effort basis to identify certain types of content.

NET ZERO INNOVATION VIRTUAL CENTRE

In News: India and the UK will jointly establish the India-UK 'Net Zero' Innovation Virtual Centre.



More on the Topic:

- It will provide a platform to bring stakeholders from both countries together to work in some of the focus areas including Decarbonization of manufacturing process & transport systems and Green Hydrogen as renewable source.
- It was announced during the India-UK Science & Innovation Council meeting

DRUG RESISTANT TB

In News: Drug resistance is now a major public health concern exacerbated by the emergence of multi and extensively drug-resistant TB.

More on the Topic:

- India has the highest burden of Multi-Drug Resistant-TB (MDR-TB) bacteria with the World Health Organisation (WHO) putting the figure at 0.39 million cases worldwide and highlighting the need to stop its spread.
- A new study for the first time first time identified a '**compromised DNA repair**' as one of the novel mechanisms for the evolution of drug resistance in Mycobacterium Tuberculosis (Mtb) which causes Tuberculosis (TB) in humans.
- MDR-TB bacteria are resistant to first-line anti-TB drugs like Isoniazid and Rifampicin and extensively drug-resistant (XDR) when it becomes resistant to first-line TB drugs, any fluoroquinolones, and at least one additional Group A drug (Moxifloxacin, Levofloxacin, Linezolid, and Bedaquiline).

INDIAN SOCIETY/SOCIAL ISSUES/SOCIAL JUSTICE

INDIA'S ZERO HUNGER GOAL

In News: According to National Family Health Survey (NFHS-5) data, Among mothers with a child between ages 6-23 months, 18% reported that their child did not eat any food whatsoever – referred to as “zero-food” – in the 24 hours preceding the survey.



More on the Topic:

- The zero-food prevalence was 30% for infants aged 6-11 months, remains worryingly high at 13% among the 12-17 months old, and persists even among 18-23 months-old children at 8%.
- Going without food for an entire day at this critical period of a child's development raises serious concerns related to severe food insecurity.
- According to the World Health Organisation, at six months of age, 33% of the daily calorie intake is expected to come from food. This proportion increases to 61% at 12 months of age.
- The recommended calorie percentages mentioned here are the minimum amount that should come from food.
- It is presumed that the child obtains the remaining calories through “on-demand” breastfeeding, meaning the child is breast-fed whenever they need it throughout the day and night, and not solely when the mother is able to provide it.
- Access to adequate and affordable nutritious food is equally necessary for mothers for healthy breastfeeding.

Challenges In front of India:

- There is a core deficiency in data related to

food and dietary consumption.

- The rising burden of cardiovascular and other non-communicable diseases in India, particularly among the rapidly growing “middle class”, is strongly linked to diet and nutrition.
- Implementation issues associated with government programs such as Roshan Abhiyan.

Indian Policies/Programs to address Food Security Issues:

- Mission Poshan 2.0: The flagship programme dedicated to maternal and child nutrition.
- National Food Security Act 2013
- Zero Hunger Programme: Began in 2017 to improve agriculture, health and nutrition.
- Eat Right India Campaign
- Food Fortification
- PM Garib Kalyan Anna Yojana

Way Ahead:

- A national effort to establish routine dietary and nutritional assessments for the entire population is the need of the hour.
- Measuring the availability, accessibility and affordability of nutritious food, especially for disadvantaged and vulnerable populations such as young children, constitutes the foundation for any evidence-based policy to end hunger and improve nutritional security among Indians.
- There is a need to effectively monitor and assess the performance of Poshan 2.0, there is an immediate need to develop appropriate food-based metrics.
- Strategic use of directly trackable metrics, as well as a strong political commitment at the highest levels also needed for eliminating Hunger.

REPORTS AND INDICES

STATE OF THE GLOBAL CLIMATE REPORT

In News: State of the Global Climate report has been published by WMO.



More on the Topic:

- Global mean temperature in 2022 was 1.15 [1.02 to 1.28] °C above the 1850-1900 average. The years 2015 to 2022 were the eight warmest in the instrumental record back to 1850. 2022 was the 5th or 6th warmest year.
- Concentrations of the three main greenhouse gasses – carbon dioxide, methane, and nitrous oxide – reached record observed highs in 2021, the latest year for which consolidated global values are available (1984-2021).
- The annual increase in methane concentration from 2020 to 2021 was the highest on record.
- Glacial losses were substantial in the previous decade. Measurements on glaciers in High Mountain Asia, western North America, South America and parts of the Arctic also reveal substantial glacier mass losses.
- Ocean warming rates have been particularly high in the past two decades. Despite continuing La Niña conditions, 58% of the ocean surface experienced at least one marine heatwave during 2022.
- Global mean sea level (GMSL) continued to rise in 2022.
- For the period 2005-2019, total land ice loss

from glaciers, Greenland, and Antarctica contributed 36% to the GMSL rise, and ocean warming (through thermal expansion) contributed 55%.

- Ocean acidification: Carbon di-oxide reacts with seawater resulting in a decrease of pH referred to as 'ocean acidification'.
- There is very high confidence that open ocean surface pH is now the lowest it has been for at least 26 [thousand years].

Climate Change Impacts over the world:

- It was estimated that over 20 million people faced acute food insecurity across the region, under the effects of the drought and other shocks.
- Record breaking rain in July and August led to extensive flooding in Pakistan.
- Record breaking heat waves affected Europe and resulted in a huge number of deaths.
- 9.8% of the global population is facing food insecurity associated with climate change. Half of these are in Asia and one third in Africa.
- Drought and flood is leading to displacement of significant populations in countries like Pakistan, Somalia, Ethiopia.
- Climate change has important consequences for ecosystems and the environment. Global warming is causing the temperate zone to expand.
- Climate change is also affecting recurring events in nature, such as when trees blossom, or birds migrate.

WORLD PRESS FREEDOM INDEX

In News: Media associations in the country have voiced concern over India slipping 11 places to 161st rank in the World Press Freedom Index, 2023.

More on the Topic:

- Global media watchdog Reporters Without Borders (RSF) publishes a yearly report on press freedom in countries across the world.
- Countries are ranked on a scale from 0–100 points (A higher score means good).
- The top three countries on the ranking are Norway, Ireland, and Denmark, while Vietnam, China, and North Korea placed last.
- Each country or territory's score is evaluated

using five contextual indicators : political context, legal framework, economic context, sociocultural context and safety.

WEF'S FUTURE OF JOBS REPORT

In News: World Economic Forum has released the Future of Jobs Report.



More on the Topic

- **Highlights of the Report:**
- Almost a quarter of jobs (23 %) are expected to change in the next five years.
- The report estimates that 69 million new jobs will be created by 2027 and 83 million will be eliminated.
- The key driver for job growth is going to be green transition and localisation of supply chains.
- 61% of businesses believe that widening the application of ESG (environment, social, and governance) standards will increase employment growth in India.
- It is followed by increasing adoption of new technologies (59%) and increased internet access (55%), among other factors.
- AI (artificial intelligence) and machine learning experts, as well as data analysts and scientists, would be the top positions for industry transformation in India.
- Key drivers of business transformation include technology adoption, followed by rising cost of living, slow economic growth, and green transition.
- 44% of workers' skills will be disrupted in the next five years.
- 61% of Indian companies think broader applications of ESG standards will drive job growth, followed by increased adoption of new technologies and broadening digital access.

- The WEF estimated that by 2025, the amount of time spent on current tasks at work by humans and machines would be equal.
- In India, the biggest obstacles to change are a lack of personnel and skills shortages. Before 2027, six out of ten workers will need training, but only half of workers currently have access to sufficient training opportunities.

Recommendations:

- When it comes to job losses, **upskilling and reskilling is the way forward**. 44% of workers' skills need to be updated for continued employment.
- There is a clear way forward to ensure resilience. Governments and businesses must invest in supporting the shift to the jobs of the future through the education, re-skilling and social support structures.
- Invest in learning and training on the job; Accelerate automation of processes; Expand use of contract work; Hire significantly more permanent staff etc. are some of the ways forwards.

LISTERIA MONOCYTOGENES BACTERIA

In News: Cadbury has recalled chocolates in UK over listeria contamination fears.



More on the Topic:

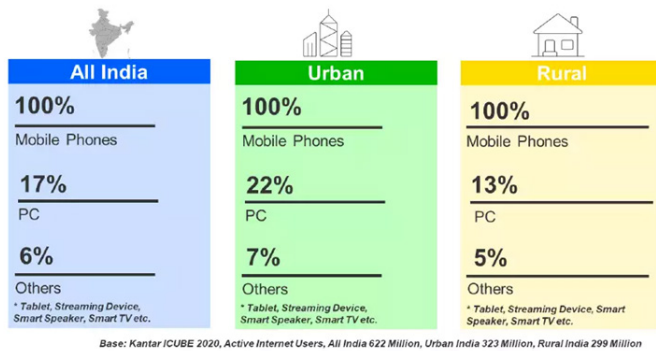
- Listeria monocytogenes is a type of bacteria that can cause infection in humans and animals.
- It may cause Listeriosis, which can lead to

serious complications, such as meningitis, sepsis, and miscarriage.

- The bacteria is commonly found in soil, water, and some animals' intestines.
- Listeria is typically spread through contaminated food, particularly ready-to-eat foods such as cooked meats, dairy products, and fresh produce.

INTERNET IN INDIA REPORT

In News: Internet and Mobile Association of India (IAMAI) released Internet in India Report.



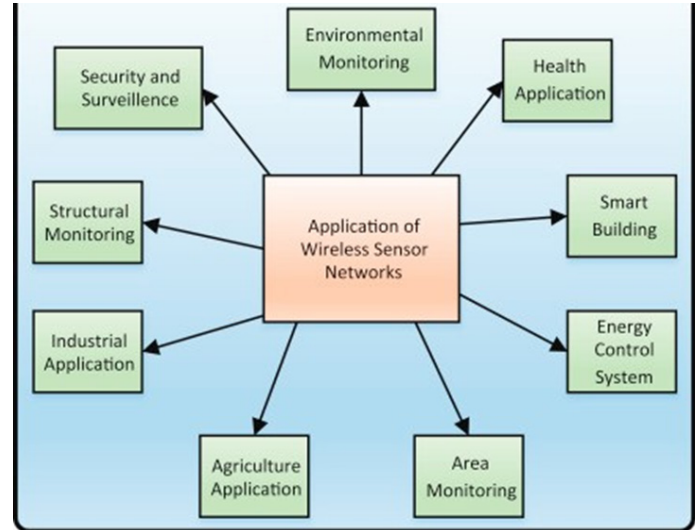
More on the Topic:

- The Internet in India Report 2022 showed that of the 759 million active users, 360 million belong to urban India and 399 million to rural India.
- The number of active internet users in India is expected to grow to 900 million from the current 759 million by 2025.
- Out of 759 million 'active' internet users, 399 million are from rural India. 56% of all new internet users in India will be from rural areas by 2025.
- Internet penetration in urban India is already at 71 %.
- Bihar has the least internet penetration while Goa has the maximum.
- Mobile phones are the primary devices used to access the internet, with 100 % of the 759 million users relying on them. However, there has been an increase in the use of other devices, rising from 8 % in 2021 to 13 % in 2022.

INTERNAL SECURITY

BATTLEFIELD SURVEILLANCE SYSTEM

In News: The Indian Army is working on a battlefield surveillance system that will bring in "multi- domain spatial awareness" on a single GIS platform to make itself more potent and efficient.



More on the Topic:

- The initiative comes under **Project SanjayI**, which will integrate thousands of sensors which will enable provision of an integrated surveillance picture to commanders and staff at all levels, besides completing sensor-shooter grid by integrating with Artillery Combat Command and Control System (ACCCS).
- Complementing the BSS is the Army Information and Decision Support System, an upgraded and redesigned version of erstwhile Combat Information Decision Support System, which will integrate inputs from all operational and managerial information systems.

MARITIME TRAFFICKING OF DRUGS

In News: The Narcotics Control Bureau seized approximately 2,500 kg of contraband drugs worth around Rs.12,000 crore in Indian waters in a special operation.

More on the Topic:

- The seizure part of 'Operation Samudragupt' targeted the maritime trafficking of drugs originating from Afghanistan.
- With a long coastline and numerous ports, India is "sensitive to drug trafficking through maritime routes."

About Narcotic Drugs:

- Narcotic drugs refer to any substance that binds with opioid receptors in the central nervous system.
- They are used to treat moderate to severe pain and are capable of producing sleep.
- Opioid is an umbrella term which refers to all natural, semisynthetic and synthetic chemicals.
- There has been a significant increase in the seizure of heroin in the Arabian Sea in 2020-21 with major seizures in India from containerised cargo originating from Afghanistan. illicit trafficking in Narcotic Drugs and Psychotropic Substances (NDPS) could finance anti-national activities (narcoterrorism).



Why is India Vulnerable to Narcotic Problem?

- Proximity to Golden Crescent and Golden Triangle - India is sandwiched between the Golden Crescent and Golden Triangle.
- The Golden Crescent and the Golden Triangle are names given to Asia's two principal areas of illicit opium production. The Golden Crescent comprises Afghanistan, Iran, and Pakistan and the Golden Triangle represents the regions of Myanmar, Laos, and Thailand.
- India is Surrounded with Long Coast Line: India has a coastline of around 7500km, it aids in safe trade and transfer of drugs.
- Increasing Demand: India has become a hot destination for cocaine, the supply of which is controlled by South American drug cartels.
- The Nature of Borders: India has proud borders which facilitates illegal trade.

COMMAND CYBER OPERATIONS AND SUPPORT WINGS

In News: Army Commanders Conference (ACC) had decided to operationalise Command Cyber Operations and Support Wings (CCOSWs) in the immediate future.



More on the Topic:

- Cyberspace has emerged as an important component of military domain both in grey-zone warfare as well as conventional operations and Indian Army today is rapidly migrating towards net-centricity, which entails increased reliance on modern communication systems at all levels.
- CCOSWs will safeguard the networks and increase preparedness levels in this niche domain. Army will also nominate 'Lead Directorates' and 'Test Bed' formations for absorption of niche technologies and enhancing fighting potential.

Significance of Cyber Security in National :

- Governments and business organisations are increasingly automating their day to day activities, which has led to an increase in cybercrimes and cyber-attacks.
- These attacks include financial scams, hacking, downloading copyrighted content, illegal pornographic content, virus attacks, cyber stalking and hate crimes against minorities and LGBTQ communities.
- Adversaries can attack critical infrastructure like dams, power & energy, Banking and financial services etc.

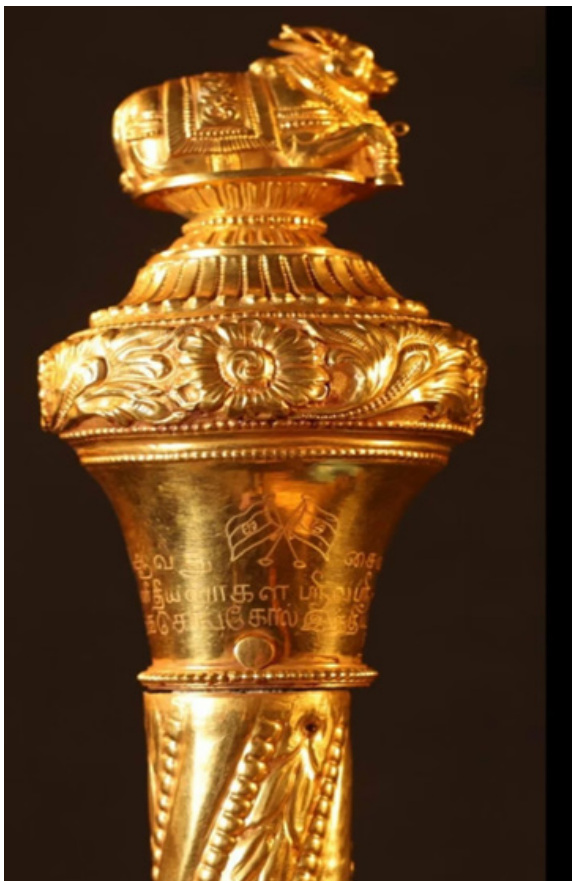
Government Initiatives in Cyber Security:

- Indian Cyber Crime Coordination Centre (I4C): The prevention of cybercrimes is being handled through seven pillars under I4C and CIS Division of Ministry of Home Affairs.
- India's national agency for cybersecurity, The Indian Computer Emergency Response Team (CERT-In), has led to a reduction in cyber-attacks on government networks due to its advancements in tackling the nation's cybersecurity. The National Critical Information Infrastructure Protection Centre (NCIIPC) has been set up.
- National Cyber Security policy (2013) has been enacted to enhance cyber security.

ANCIENT, MODERN INDIA AND ART AND CULTURE

HISTORIC SENGOL

In News: The Prime Minister Narendra Modi will install the 'Sengol', a historical sceptre from Tamil Nadu, in the new Parliament building.



More on the Topic:

- The 'Sengol' was received by Independent India's first Prime Minister, Jawaharlal Nehru, to symbolically represent the transfer of power from the British and was later kept in a museum in Allahabad.
- It is a golden sceptre, which was crafted by Vummidi Bangaru Chetty, a famous jeweler in the Madras Presidency.
- Sengol gets its name from the Tamil word 'semmai', meaning righteousness.
- It was inspired by a ceremony (for transfer of power) performed during the Chola dynasty.
- Leaders of Thiruvaduthurai Atheenam, a mutt in Tamil Nadu's Tanjore district, commissioned manufacturing of Sengol.
- It is believed to be in practice since Sangam Age and finds mention in texts such as Purananooru, Kurunthogai, Perumpamaan Arupadai, and Kalithogai

CHANNAPATNA TOYS

In News: The Prime Minister has unveiled the mascot of the International Museum Expo 2023 which is a stylised and contemporary life-size version of a 5-foot tall toy in Channapatna style inspired by the Bronze Dancing Girl of the Sindhu Saraswati Sabhyata.



More on the Topic:

- The International Museum Expo is being organized as part of Azadi ka Amrit Mahotsav to celebrate the 47th International Museum Day (IMD).
- The IMD theme for this year is 'Museums, Sustainability and Well Being'.
- The Museum Expo is designed to initiate a holistic conversation on Museums with museum professionals to enable them to evolve as cultural centers that play a pivotal role in India's cultural diplomacy.

Channapatna Toys:

- GI tagged Channapatna toys are a particular form of wooden toys (and dolls) that are manufactured in the town of Channapatna in the Ramanagara district of Karnataka.
- As a result of the popularity of these toys, Channapatna is known as Gombegala Ooru (toy-town) of Karnataka.
- Traditionally, the work involved lacquering the wood of the *Wrightia tinctoria* tree, colloquially called Aale mara (ivory-wood).
- It has a rich cultural history dating back to the time of Hyder Ali and Tipu Sultan in the

18th century.

- The toys are devoid of any chemicals as they are dyed with vegetable colours.

Dancing Girl of Sindh:

- The sculpture, famously known as 'The Dancing Girl,' is one of the highest achievements of the artists of Mohenjodaro.
- The 'Dancing Girl' is a sculpture made of bronze. It belongs to the Indus Valley Civilization and dates back to circa 2500 BCE.



TUNGNATH TEMPLE

In News: A notification was issued by the central government to declare the ancient Tungnath temple as a monument of national importance.



More on the Topic:

- Tungnath is one of the highest Shiva temples in the world and is the highest of the five Panch Kedar temples located in the Rudraprayag district, in the Indian state of Uttarakhand.
- It is believed that the Panchkedars were built by the Pandavas during the Mahabharata era.
- The Tungnath mountains form the Mandakini and Alaknanda river valleys.
- It is the only ancient 'Shivalaya' of its kind located at the highest point above sea level in Asia.

BANDHAVGARH NATIONAL PARK (BNP)

In News: Archaeologists have discovered 1,500-year-old rock paintings and numerous 1,800-2,000 year old man-made water bodies in Bandhavgarh National Park.

More on the Topic:

- The 26 caves that were found are associated with the Mahayana sect of Buddhism.
- These date back to the same time as the Ajanta caves in Aurangabad, a UNESCO World Heritage Site.
- Besides the caves, the team also found the remains of 26 temples, two mathas, two stupas, 46 idols and sculptures, 26 fragments and 19 water bodies.
- A Buddhist pillar fragment containing a miniature stupa carving, dating to the 2nd-3rd century CE, and 24 Brahmi inscriptions from the 2nd-5th century CE have also been found.
- The temples are from more recent times — the Kalachuri period (9th-11th century), while the water bodies range between 2nd-15th centuries CE.
- The places Kaushami, Mathura, Pavata (Parvata), Vejabharada and Sapatanaairikaa are mentioned in the Brahmini inscriptions, while the inscribed names of kings include Shri Bhimsena, Maharaja Pothasiri and Bhattadeva.

About Bandhavgarh National Park:

- Bandhavgarh was declared a national park in 1968 and became a tiger reserve in 1993.
- It is spread across the Vindhya hills in Umaria district in Madhya Pradesh.
- It is known for the high density of Tigers. Famous Natural hub for white tigers.

ASSAM'S RANG GHAR

In News: Controversy erupted in Assam after "religious symbols" were seen in laser show projections at the Ahom era amphitheater Rang Ghar.



More on the Topic:

- It was built by Swargadeo Promotta Singha in 1744 A.D. Its shape is octagonal at base.
- Roof over the two-storey building is shaped like an inverted royal Ahom boat, topped with carved stone crocodiles.
- It once served as the royal sports-pavilion where Ahom kings and nobles were spectators at games like buffalo fights and other sports at Rupahi Pathar - particularly during the Rongali Bihu festival in the Ahom capital of Rangpur.

KHASI TRIBES

In News: A tribal council's order not to issue a Scheduled Tribe (ST) certificate to any Khasi person who adopts the surname of her or his father has triggered a war of words in matrilineal Meghalaya.



More on the Topic:

- The Khasis, numbering about 1.39 lakh, are one of the three indigenous matrilineal communities in the northeastern State. The other two are Garos and Jaintias.
- Khasis follow a matrilineal system of inheritance and youngest daughter or "Ka Khadduh" is eligible to inherit the property.
- Khasis are now mostly Christians but before that, they believed in a Supreme Being, The Creator – U Blei Nongthaw.

- Their festivals include Nongkrem Dance and Shad Suk Mynsiem.

MEITEI COMMUNITY

In News: Mob violence sprung out as massive opposition by Manipur's tribal communities to the demand of the northeastern state's majority community, the Meiteis, for Scheduled Tribe (ST) status.



More on the Topic:

- The Meiteis are the largest community in Manipur. There are 34 recognized tribes, which are broadly classified as 'Any Kuki Tribes' and 'Any Naga Tribes'.
- They speak Meitei language also known as Manipuri, one of languages under the Eighth schedule of Constitution.
- The Meiteis primarily settled in the Imphal Valley region in modern-day Manipur, though a sizable population has settled in the other Indian states of Assam, Tripura, Nagaland, Meghalaya, and Mizoram.
- There is also a notable presence of Meitei in the neighbouring countries of Myanmar and Bangladesh.
- Rice cultivation on irrigated fields is the major occupation.
- Meitei people celebrate Yaoshang Festival.

SHILABHATTARIK

In News: Bhandarkar Oriental Research Institute (BORI) have recently obtained historical evidence establishing the literary contributions of poetess Shilabhattacharika, the daughter of Chalukya ruler Pulakeshin II.



More on the Topic:

- The evidence was obtained from one of five copper plates that contained more than 60 sentences in Sanskrit written in Brahmi script.
- One of her poems mentions the Narmada River (Reva) and the Vindhya mountains. Therefore, as a young woman, she probably lived along the Narmada River, near the Vindhyas.
- Shila Bhattarika has been quoted by several classical Sanskrit literary critics, and her verses appear in most major Sanskrit anthologies.
- She is known to have written at least 46 poems on topics such as "love, morality, politics, nature, beauty, the seasons, insects, anger, indignation, codes of conduct, and the characteristic features of various kinds of heroines."
- However, most of her works are now lost, and only six of her short poems are extant.
- Noted Marathi poetess Shanta Shelke too has drawn inspiration from Shilabhattarika's verses to compose one of her most iconic songs— *toch chandrama nabhat* (it is the same moon in the sky).

BASOHLI PAINTINGS

In News: The world-famous Basohli paintings from Kathua district have obtained the Geographical Indication (GI) tag following approval of the National Bank for Agriculture and Rural Development, Jammu.



More on the Topic:

- The Pahari School of Art developed in the mountainous regions of Basohli, Kulu, Guler, Kangra, Jammu, and Garhwal between the 17th and 19th centuries.
- The first centre of the Pahari school materialized at Basohli with its own bold and flamboyant style.
- The characteristic features of these paintings were the use of bright and bold colours like red, yellow, and blue in the borders, as well as for the generally flat background.
- The other distinguishing part was the facial features- a prominent nose and lotus-shaped eyes.
- The female figures can be categorised into three types according to their attire.
- The dressing style of both males and females resemble the clothes worn in the Mughal or Rajput courts.
- Depiction of flora was not unusual in Basohli paintings. The artists' favourite was the bright red flowers of rhododendron.
- The most distinctive feature of these paintings was, however, the portrayal of jewellery- embossed white paint was used for pearls and the wing-case of beetles for emerald green.

CHAM LAMA DANCE

In News: One of the most colourful events organised by monasteries in Sikkim are the 'chaam' or the ritualistic masked dances.



More on the Topic:

- These are usually organised as part of a bigger festival and performed by the monks of the Tibetan Buddhism order.
- The theme can range from appeasement of the gods to tales from the life of the divine characters. Wearing elaborate masks and colourful costumes, the performers represent various characters, broadly divided into good and bad, the divine and the devil.
- Padmasambhava (Guru Rinpoche) the founder of Nyingmapa is believed to have started the Cham Dance tradition.
- The dance often depicts scenes of Padmasambhava's life and his 8 manifestations

UNESCO'S WORLD HERITAGE LIST

In News: Santiniketan in West Bengal has been recommended for inclusion in UNESCO's World Heritage List.



More on the Topic

- The International Council on Monuments and Sites (ICOMOS), a France-based international non-governmental organization, made the recommendation.
- The ICOMOS is an advisory body to the UNESCO World Heritage Centre, comprising experts, representatives from local authorities, heritage organizations, and companies.

- Visva-Bharati, the university built by the Nobel Laureate poet, has already received the Heritage tag. Now it will be the town of Santiniketan to follow suit.

About Shanti Niketan:

- It was originally a place bought by Rabindranath Tagore's father, Debendranath Tagore, and later developed into a university by Rabindranath Tagore himself.
- The Santiniketan campus is adorned with splendid sculptures, frescoes, murals, and paintings created by renowned artists such as Rabindranath Tagore, Nandalal Bose, Ramkinkar, Binodbehari Mukhopadhyay, and others.
- Varshamangal, the festival of rains, is celebrated during August/September.
- Santiniketan celebrates unique festivals like Briksharopan (festival of Planting Saplings) and Halakarshan (festival of Plowing the Fields) on the 22nd and 23rd days of Sravana (August), respectively.

About World Heritage Sites:

- World Heritage Sites are landmarks or areas of outstanding universal value that are recognized and protected by the United Nations Educational, Scientific and Cultural Organization (UNESCO).
- These sites are selected based on their cultural, historical, or natural significance and are considered to be part of the common heritage of humanity.
- There are over 1,100 World Heritage Sites located in more than 160 countries.

Indian World Heritage Sites:

- There are 40 World Heritage Sites In India. The first site listed as a World Heritage site in India was Agra Fort in 1983.
- The same year, the Taj Mahal, Ajanta Caves, and Ellora Caves were inscribed on the list by the World Heritage Committee.
- Recently, an important Indus valley civilization, Dholavira, was added to the list of the UNESCO World Heritage sites in India, after which India entered the super 40 club.

HEMIS AND THIKSEY MONASTERIES

In News: Delegates of G20 summit visited Hemis and Thiksey Monasteries.

GOPAL KRISHNA GOKHALE

In News: The Prime Minister has paid homage to Gopal Krishna Gokhale on his birth anniversary.



More on the Topic:

- Gopal Krishna Gokhale CIE was an Indian political leader and a social reformer during the Indian independence movement.
- Gokhale was a senior leader of the Indian National Congress and the founder of the Servants of India Society.
- He was also associated with the **Sarvajanik sabha** journal started by Govind Ranade.
- In 1908, Gokhale founded the **Ranade Institute of Economics**.
- He started an English weekly newspaper, **The Hitavada** (The people's paper).
- He is regarded by Mahatma Gandhi as his political guru.
- Gandhi wrote a book in Gujarati dedicated to the leader titled '**Dharmatma Gokhale**'.
- Between 1899 and 1902, he was a member of the Bombay Legislative Council followed by work at the Imperial Legislative Council from 1902 till his death (1915).
- At the Imperial legislature, Gokhale played a key role in framing the **Morley-Minto reforms** of 1909.



More on the Topic:

- Thikse Gompa or Thikse Monastery is a gompa affiliated with the Gelug sect of Tibetan Buddhism.
- It is located on top of a hill in Leh, Ladakh, India.
- It is also known for its annual Gustor Festival.
- Hemis Monastery Hemis Monastery is a Himalayan Buddhist monastery situated in the banks of Indus River, in Ladakh.
- It belongs to the Dragon Order of Mahayana Buddhism (or the Drupka Lineage).
- The annual Hemis festival honouring Padmasambhava is held there in early June.

INDIA'S WOMEN IN SCIENCE

In News: The publication of *Lab Hopping: A Journey to Find India's Women in Science*, showcases the struggle women in Science in India have to endure.



More on the Topic

- Recent data from the Department of Science and Technology (DST) showed women made up 28% of participants in 2018-19 in extramural Research and Development (R&D) projects, up from 13% in 2000-01.
- The proportion of women primary investigators in R&D increased more than four times – from 232 in 2000-01 to 941 in 2016-17. The proportion of women researchers rose from 13.9% in 2015 to 18.7% in 2018.

Issues faced by Women in Science?

- Institutional apathy
- Poor working conditions
- Sexual harassment
- Carrying the twin burden of home and the workplace,
- Deeply entrenched patriarchy

Government Initiatives to promote Women in Science:

- **SERB-POWER (Promoting Opportunities for Women in Exploratory Research):** The Scheme is aimed to mitigate gender disparity in science and engineering research funding in various S&T programs in Indian academic institutions and research and development (R&D) laboratories, address comparatively lower participation of women scientists in research activities and to identify and support competitive women researchers in the country.

- SERB – POWER provides structured support in research to ensure equal access and weighted opportunities for Indian women scientists engaged in R&D activities.
- The R&D support to women scientists is provided through two components, namely: SERB POWER Fellowships & SERB POWER Research Grants.
- “Knowledge Involvement in Research Advancement through Nurturing (KIRAN)” Scheme: ‘Women Scientist Scheme (WOS)’ under KIRAN provides career opportunities including fellowships to unemployed women scientists and technologists, especially those who had a break in career, for pursuing research in frontier areas of science and engineering.
- ‘Consolidation of University Research through Innovation and Excellence in Women Universities (CURIE)’ Programme: only women Universities are being supported for development of research infrastructure and creation of state-of-the-art research laboratories to enhance women’s participation in S&T domain.
- **Indo-US Fellowship for Women in STEMM (Science, Technology, Engineering, Mathematics & Medicine):** encourages Indian women scientists and technologists to undertake international collaborative research in premier institutions in the USA for a duration of 3-6 months.
- ‘Biotechnology Career Advancement and Re-orientation Programme (BioCARE)’ to encourage women scientists in Biotechnology research.
- The Ministry of Earth Sciences has initiated a special award called “National Award for woman scientist” and is being conferred to one-woman scientist each year on the Foundation day.
- **Women Entrepreneur’s Quest (WEQ) Programme** was initiated by DST in partnership with Anita Borg Institute, USA for scouting and supporting Women Entrepreneurs in Technology.
- **Women Entrepreneurship and Empowerment Foundation (WEE)** is India’s first of its kind initiative by IIT Delhi supported and sponsored by DST to strengthen women eco - system.

Practice Questions



1) Who is the author of the poem, "Go, Get Education"?

- (a) Savitribai Phule
- (b) Annie Besant
- (c) Madam Bhikaiji Cama
- (d) Sarojini Naidu

2) Mahakaleshwar temple is one of the 12 Jyotirlingas in the country. Where is it located?

- (a) Uttar Pradesh
- (b) Odisha
- (c) Madhya Pradesh
- (d) Haryana



3) Which of the following is NOT a constitutional body in India?

- (a) National Human Rights Commission
- (b) Election Commission of India
- (c) Reserve Bank of India
- (d) Union Public Service Commission

4) Which of the following statement/s is/are true?

- 1. Nitrogen dioxide (NO_2) is not a greenhouse gas.
- 2. Carbon dioxide (CO_2), methane (CH_4), and water vapor (H_2O) are all greenhouse gases.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2



5) Which of the following Indian states does not share its border with Bhutan?

- (a) West Bengal
- (b) Assam
- (c) Arunachal Pradesh
- (d) Sikkim

6) Dugdh Sanakalan Sathi Mobile App is being launched by?

- (a) Ministry of Heavy Industries
- (b) Ministry of Women and Child Development
- (c) Ministry of Corporate Affairs
- (d) Ministry of Agriculture and Farmers welfare





7) In the west, the Mediterranean Sea is connected to the Atlantic Ocean via?

- (a) Malacca Strait
- (b) Strait of Gibraltar
- (c) Bering Strait
- (d) Strait of Hormuz

8) Which of the following is not a fundamental duty as per the Indian Constitution?

- (a) To abide by the Constitution and respect its ideals
- (b) To safeguard public property and to abjure violence
- (c) To secure for the citizens a uniform civil code throughout the territory of India
- (d) To promote harmony and the spirit of common brotherhood



9) Which of the following statement/s is/are true?

1. DAY-NULM is a flagship mission under the Union Ministry of Housing and Urban Affairs.
2. It has the aim to uplift the urban poor by enhancing sustainable livelihood opportunities through skill development.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2



10) Ambubachi Mela is associated with?

- (a) Somanātha temple
- (b) Shree Padmanabhaswamy Temple
- (c) Khajuraho Temple
- (d) Kamakhya Temple



Mains Questions

- 1) "Overexploitation of groundwater resources is the next man-made disaster waiting to happen". Comment
- 2) BRICS grouping has lost its relevance. Do you agree? Critically analyse

1. a 2. c 3. c 4. c 5. a
6. a 7. b 8. c 9. c 10. d



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