Aims

- To make India a global geospatial leader by providing the best-in-class innovation ecosystem.
- To set up high resolution topographical survey and mapping, with a high-accuracy Digital Elevation Model (DEM) by 2030.
- To develop Geospatial infrastructures, Geospatial skill and knowledge, standards, Geospatial businesses.

Goals

- **Year 2025:** Put in place an enabling policy and legal framework that supports liberalization of Geospatial sector and democratization of data for enhanced commercialization with Value Added Services.
- **Year 2030:** High resolution topographical survey & mapping.
- **Year 2035:** High resolution/accuracy Bathymetric Geospatial Data of inland waters and sea surface topography of shallow/deep seas. National Digital Twin of major cities and towns.

National Geospatial Policy 2022

Institutional Structure

- At national-level Geospatial Data Promotion and Development Committee (GDPDC) for developing and putting into practice promotional plans for the geospatial industry.
- GDPDC would replace and subsume the functions and powers of the National Spatial Data Committee (NSDC)
- Department Of Science &Technology will be the the **nodal Department of the Government and GDPDC will make suitable recommendations to DST**

Concerns

- Geospatial data can be described as complex data objects with complex relationships among them.
- Little attention has been paid to addressing the National security concerns, such as access control, securities and privacy policies.
- There are severe chances of potential data misuse and privacy violations.
- Sensitive information such as building ownerships might be revealed
- Information about critical infrastructure could become publicly accessible and it is a major concern in context to the applications in Defence

Issues with Indus Water Treaty

- The Tulbul project was suspended in 1987 after Pakistan objected to it.
- Recently, govt decided to review this suspension not taking into account Pakistan's protests.
- Pakistan's Left Bank Outfall Drain (LBOD) project passes through the Rann of Kutch in India's Gujarat.
- The project was constructed without India's consent.
- Prime Minister Modi remarked that blood and water cannot flow together.
- Experts believe that the treaty is more favourable towards Pakistan than India.

Why in News?

- India notified Pakistan of its intention to review and modify the Indus Waters Treaty (IWT).
- Conflict is over the Kishanganga and Ratle (on the Chenab River) hydroelecric projects in Jammu and Kashmir.
- Notice sent after Violation of the graded mechanism of dispute settlement envisaged by Article IX of the IWT 1960.

The Indus Water Treaty (IWT)

What is Indus Water Treaty?

- IWT govern division of Indus river water between India and Pakistan.
- Mediated by World bank
- Three-step dispute resolution mechanism under Article IX.
- It divides Indus River into two parts - the western rivers—Indus, Chenab and Jhelum—to Pakistan, Eastern rivers—Ravi, Beas and Sutlej—were allocated to India.

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What is ASER?

- ASER conducted every year since 2005 in all rural districts of India.
- Aims to understand whether children in rural India are enrolled in school and whether they are learning.
- Surveys provided representative estimates of children aged 3 to 16.
- Basic reading & arithmetic levels of children aged 5 to 16 at the national, state, and district levels are assessed.

Why in News?

- The NGO Pratham,
- Recently released the 17th Annual Status of Education Report(ASER) 2022 highlighting the impact of the pandemic on education.
- Reveals high school enrollment rates, which is a good performance indicator for government programs such as the Nipun Bharat Mission.

Annual Status of Education Report 2022

What are the Report's Key Findings?

- According to the ASER, 2022 the country has seen an increase in the enrolment of children
- in government schools.
- In India, basic reading and arithmetic skills of young children in Class 3 and Class 5 have declined.
- The decrease in the proportion of girls not enrolled in schools for the age group 11-14 from 4.1% in 2018 to 2% in 2022 is a significant improvement and a positive development.

Mind Map

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What is the NISAR MISSION?

- NISAR built by space agencies of the US and India under a partnership agreement signed in 2014.
- NISAR will map the entire globe in 12 days.
- It is a Low Earth Orbit (LEO) observatory.

Why in News?

- Recently, NISAR received a send-off ceremony at the NASA's Jet Propulsion Laboratory (JPL) in California, USA.
- NISAR will be the first space-based radar of its kind to map the entire Earth.

NISAR
(NASA-ISRO Synthetic Aperture Radar)

Features of NISAR

- It is a 2,800 kilograms satellite consisting of both L-band and S-band Synthetic Aperture Radar instruments.
- NASA provided the L-band radar, GPS, ISRO provided the S-band radar, the Geosynchronous Satellite Launch Vehicle.
- S band radars operate on a wavelength of 8-15 cm and a frequency of 2-4 GHz.
- Has a 39-foot stationary antenna reflector, made of a gold-plated wire mesh.

Expected Benefits of NISAR

- NISAR will provide a wealth of data and information about changes to the Earth's surface, natural hazards, and ecosystem disruptions.
- Will provide information to manage natural disasters such as earthquakes, tsunamis, and volcanic eruptions etc.
- Will provide data for infrastructure monitoring, such as monitoring of oil spills, urbanization, and deforestation.
- Will help to monitor and understand the impacts of climate change on the Earth's land surface.

De-recognition and Deregistration of Political parties

How are Political Parties Recognised?

- The Election Commission of India registers political parties and further recognises them as National or State parties on basis of Poll Performance.
- The Representation of People's Act, 1951 grants the status of recognised "State " or "National Party" to the registered parties.
- National Party: According to ECI, a party is recognised as a National Party when it is 'recognised' in 4 or more states, or
- if its candidates have secured at least 6% of total valid votes in atleast 4 states, or
- if it has won at least 2% of the total seats in the LS from atleast 3 states.

Difference between Derecognition and Deregistration of Political parties.

- Cancellation of the registration of a political party is called Deregistration. However, the ECI is not empowered to de-register parties. Once a political party is deregistered, it cannot contest elections.
- Derecognisation of a political party means losing the status and privillege of being a national or state party.
- Aparty can be derecognised according to its poll performance. However, it can be deregistered on the grounds : registered through fraud, declared illegal and/ or can no longer abide by the Indian Constitution.

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De-recognition and Deregistration of Political parties
(Context: EC Derecognises TMC, NCP, CPI as National Parties; AAP Gets National Status)

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Representation of People Act, 1951

- The RPA 1951 regulates the actual conduct of elections and by-elections
- It deals with the registration of Political Parties, specifies the qualifications and disqualifications of the Political parties.
- The RPA regulates the behaviour of political parties during the course of elections
- No provision of the Representation of peoples Act provides for any mechanism for de-registration, however, it can derecognise the political parties.

Election Commission of India

- Election Commission of India is a constitutional body responsible for the conduct of free and fair elections.
- The body is responsible for maintaining electoral roll, recognising political parties and a proper conduct of free and fair elections.
- The body recognises the territorial areas of the electoral constituencies, based on the Delimitation Commission Act.

The Principle of Fraternity in Indian Constitution

Fraternity: through Indian Lens

- Fraternity means a sense of brotherhood, which gives unity and solidarity to social life.
- Idea is linked to social solidarity, unity and a sense of empathy in a society.
- Fraternity is a stepping stone for Equality and Liberty.
- Fraternity builds unity in diverse nations such as ours.
- As a living document, fraternity was added to humanise the logical laws.

Constitutional Provisions

- Art 51 A, added by the 42nd Amendment is a prime example
- The term is present in the Preamble of the Constitution, along with liberty, equality and justice
- This justifies the welfare nature of the state

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The Principle of Fraternity in Indian Constitution

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Challenges towards achieving Fraternity

- The social and cultural differences in a diverse population with different languages, dialects, culture and religion etc poses a major challenge for achieving fraternity.
- The economic difference of the populace creates a divide in the social issues.
- Failure of constitutional morality can lead to a loss of confidence in institutions and the rule of law.
- The inadequate moral order, lack of ethics and social responsibilities challenges the unity.

Significance of Fraternity in a State

- It promotes interfaith dialogue
- Alleviates caste and class hierarchy
- Supports the social support initiatives and leads to overall development of the society
- The collective action helps in a strong base of the society

Developing secure maritime communication using Quantum Technology

Maritime Communication and Security

- Maritime Communication is the communication between ships or with the shore
- The Indian Navy needs a safe, secure and encrypted way to communicate to the ground.
- The development of an end-to-end simulation toolkit named "qkdSim", will ensure safety in communication platforms, establish a secure communication between two buildings, and, more recently, between a stationary source and a mobile receiver.

Quantum Technology

- It refers to the study and application of quantum mechanics principle.
- Simply, the particle nature of material is studied and their characteristics are used in technology.
- Quantum communication- a subfield of quantum technology which fundamentally focuses on a different approach to encryption.
- RRI will research towards developing quantum key distribution techniques that the Indian Navy could use for the nation's efforts towards securing free space communications.

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Developing secure maritime communications using Quantum Technology (Context: RRI, Indian Navy ink pact)

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Technology in Defence

- Technology in the defence and security sectors is the need of the hour with the rise of AI and machine learning
- Quantum technology can be used for fluent and secure communications.
- Drones can be used for monitoring as well as distribution of resources at difficult locations
- A section of military intelligence is developed for data analysis.

Significance of Quantum Technology in Defence

- It provides a secure communication as the data is encrypted, which makes it difficult for hackers to intercept
- Faster communication is ensured with the technology as it uses quantum entanglement to transmit information.
- The technology improves navigation accuracy by measuring the Earth's magnetic field with high precision, which helps in navigation through narrow channels and avoid obstacles.

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High Sea Treaty

What is High Sea Treaty?

- International agreement to make rules to govern the open seas i.e. All the saltwater bodies across Earth that are not the part of territorial or internal waters of a state
- Also known as Biodiversity Beyond National Jurisdiction (BBNJ) Treaty
- Historical in approach as, its the only framework to regulate international waters, under the jurisdiction of no nations and cover almost 2/3rd oceans
- Key players: EU, US , UK and China

Need to protect High Seas

- Only 1.2% of the high seas are currently protected
- A variety of flora and marine species at the risk of extinction
- exploitation and pollution in the high seas, due to lack of regulator
- Crucial to enforce 30*30 pledge, made at UN Biodiversity conference

High Sea Treaty (Context : High seas treaty: historic deal to protect international waters finally reached at UN)

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Technology in Defence

- It will ensure the conservation and sustainable use of marine biological diversity
- Follows polluter pays principle
- It will build resilience of ecosystems against the impact of climate change and ocean acidification
- Recognises small island developing states
- Takes care of interests of landlocked areas

Significance of High Sea Treaty

- Can be considered as 'Paris Agreement for Oceans'.
- Legally binding treaty.
- Comprehensive protection of the endangered species
- It will achieve the 30*30 target set at UN CBD COP 15