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For UPSC CSE

24 August 2024

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Art and Culture

1. Hampi and Vijayanagara Empire - Indian Express

Relevance: Indian Culture - Salient aspects of Art Forms, Literature and Architecture from ancient to modern times

Hampi/ Pampakshetra of Kishkindha

- **Location:** Central Karnataka on the banks of the Tungabhadra River.
- **Significance:** A UNESCO World Heritage Site & was once the capital of the Vijayanagara Empire, which thrived from the 14th to the 16th century.
- **River:** Tungabhadra River
- **Prominent temples:** Virupaksha Temple, Vittala Temple, Lotus Mahal, Queen's Bath, and Elephant Stables.
- **Architecture:** Large dimensions, florid ornamentation, bold and delicate carvings, stately pillars, magnificent pavilions and iconographic and traditional depictions having subjects from Ramayana & Mahabharata.

Vijayanagar Empire

- **Establishment:** 14th century (1336 AD) by Harihara and Bukka of Sangama dynasty.
- **Capital city:** Hampi
- **Extension:** From the river Krishna in the north to the extreme south of the peninsula.
- **Ruled by 4 dynasties:**
 - Sangama
 - Saluva
 - Tuluva
 - Aravidu
- **Major ruler:** Krishnadevaraya (ruled 1509-29)



2. Lothal - PIB

Relevance: Indian Culture - Salient aspects of Art Forms, Literature and Architecture from ancient to modern times

Context

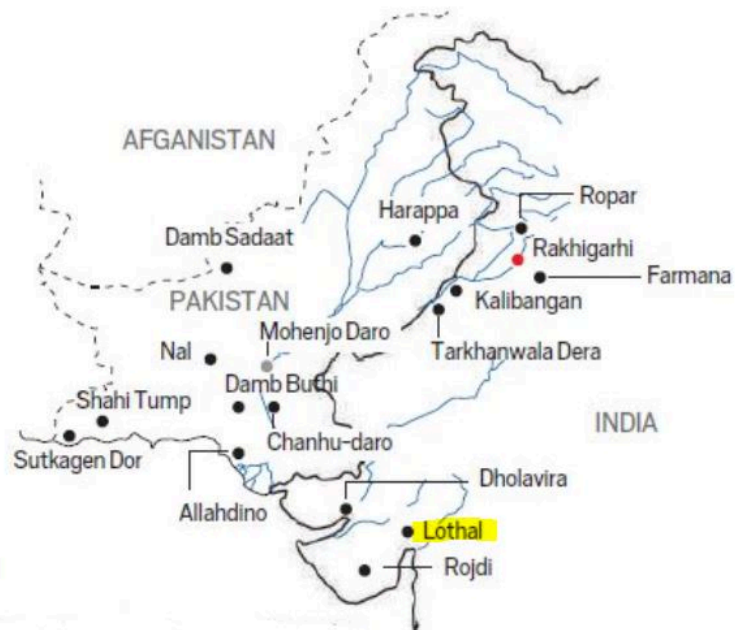
Under the Sagarmala programme, Ministry of Ports, Shipping and Waterways is developing the National Maritime Heritage Complex (NMHC), at Lothal, Gujarat.

National Maritime Heritage Complex

- **Aim:** To showcase India's maritime heritage from ancient to modern times, using an edutainment approach and incorporating the latest technology.
- **Component:** The project is part of the Sagarmala Programme
- **Feature:** The complex will house Asia's largest underwater maritime museum, India's grandest naval museum, Lothal mini-recreation, which will recreate Harappan architecture through immersive technology.
- **4 theme parks:**
 - Memorial theme park
 - Maritime and Navy theme park
 - Climate theme park, and Adventure
 - Amusement theme park

Lothal

- **About:** One of the southernmost sites of the Indus Valley civilization (IVC), located in the Bhāl region of Gujarat.
- **Establishment:**
Estimated in 2,200 BC.
- **Literal meaning of Lothal:** The mound of the dead.
- **World's earliest known dock:** It connected the city to Sabarmati River on the trade route between Harappan cities in Sindh and Saurashtra peninsula
- **Discovery:**
Excavation work was carried out in Lothal between February 1955 and May 1960.



Geography

3. Marsyangdi river/ Raging River - The Hindu

Relevance: Salient features of Physical Geography



Climate Change: Glacial retreat and changing precipitation patterns.

Environmental Degradation: Deforestation, unregulated tourism, and construction activities.

Flooding: Prone to landslides and flash floods during the monsoon season.

Water Resources: Part of the larger Ganges River basin making it important for regional water-sharing agreements between Nepal and India.

Challenges:

Agriculture: Supports irrigation in the surrounding valleys.

Tourism: A popular site for trekking, especially along the Annapurna Circuit, and for white-water rafting.

Livelihood: Supports fishing and other local industries.

Historical Trade Route: The river valley has historically been part of trade routes connecting Nepal with Tibet and India.

Socio-Economic Importance:

Glacier-fed river making it vulnerable to climate change.

Nature:

Marsyangdi river

Country: Nepal

Origin: From the confluence of two mountain streams in the Manang district of Nepal.

Source: Glaciers from the Annapurna massif.

Course: It flows eastwards through the Annapurna Range and joins the Trishuli River, eventually becoming part of the Narayani River system.

Length: ~ 150 kilometers.

Marsyangdi Hydroelectric Projects:

Lower Marsyangdi Project: With a capacity of around 69 MW, it was one of the earlier hydroelectric projects built on the river.

Upper Marsyangdi Project: A more recent development, contributing significantly to Nepal's power generation.

Significance: Crucial for the country's energy needs and economic development.

Society

4. How to ensure dignity for the terminally-ill - Indian Express

Relevance: Salient features of Indian Society

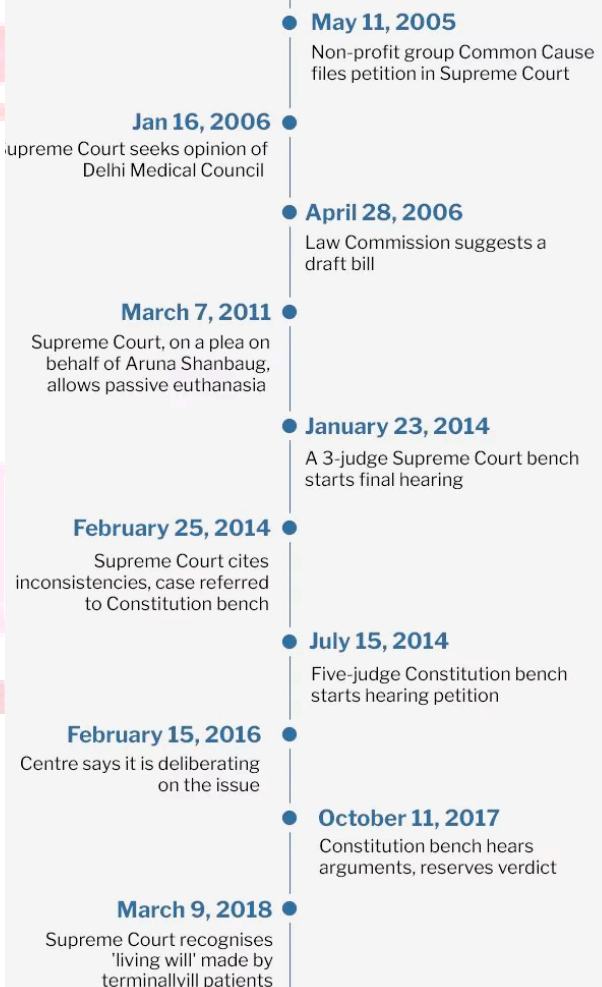
Context

A recent Supreme Court judgment reveals the legal and ethical confusion surrounding euthanasia in India.

Passive euthanasia

- **Meaning:** The act of withholding or withdrawing medical treatment, such as withholding or withdrawing life support, with the intention of allowing a person to die.
- **Active euthanasia:** It involves an active intervention to end a person's life with substances or external force, such as administering a lethal injection.
- **Euthanasia in India:**
 - **Legal passive euthanasia:** The Supreme Court legalised passive euthanasia in 2018, stating that it was a matter of 'living will'.
 - **Ruling of the judgement:** An adult in his conscious mind is permitted to refuse medical treatment or voluntarily decide not to take medical treatment to embrace death in a natural way, under certain conditions.
 - **Lays down guidelines for 'living will'** made by terminally ill patients.
 - **Constitutional provision:** SC stated that dignity in the process of dying is as much a part of the right to life under Article 21.

Passive Euthanasia: A Timeline



Different Countries with Euthanasia:

- **Netherland, Luxembourg, Belgium:** They allow both euthanasia and assisted suicide for anyone who faces “unbearable suffering” that has no chance of improvement.
- **Switzerland:** It bans euthanasia but allows assisted dying in the presence of a doctor or physician.
- **Canada:** It announced that euthanasia and assisted dying would be allowed for mentally ill patients by March 2023; however, the decision has been widely criticised, and the move may be delayed.
- **United States:** It has different laws in different states. Euthanasia is allowed in some states like Washington, Oregon, and Montana.

Right to Privacy is protected as an intrinsic part of Right to Life and Personal Liberty. Which of the following in the Constitution of India correctly and appropriately imply the above statement? (2018)

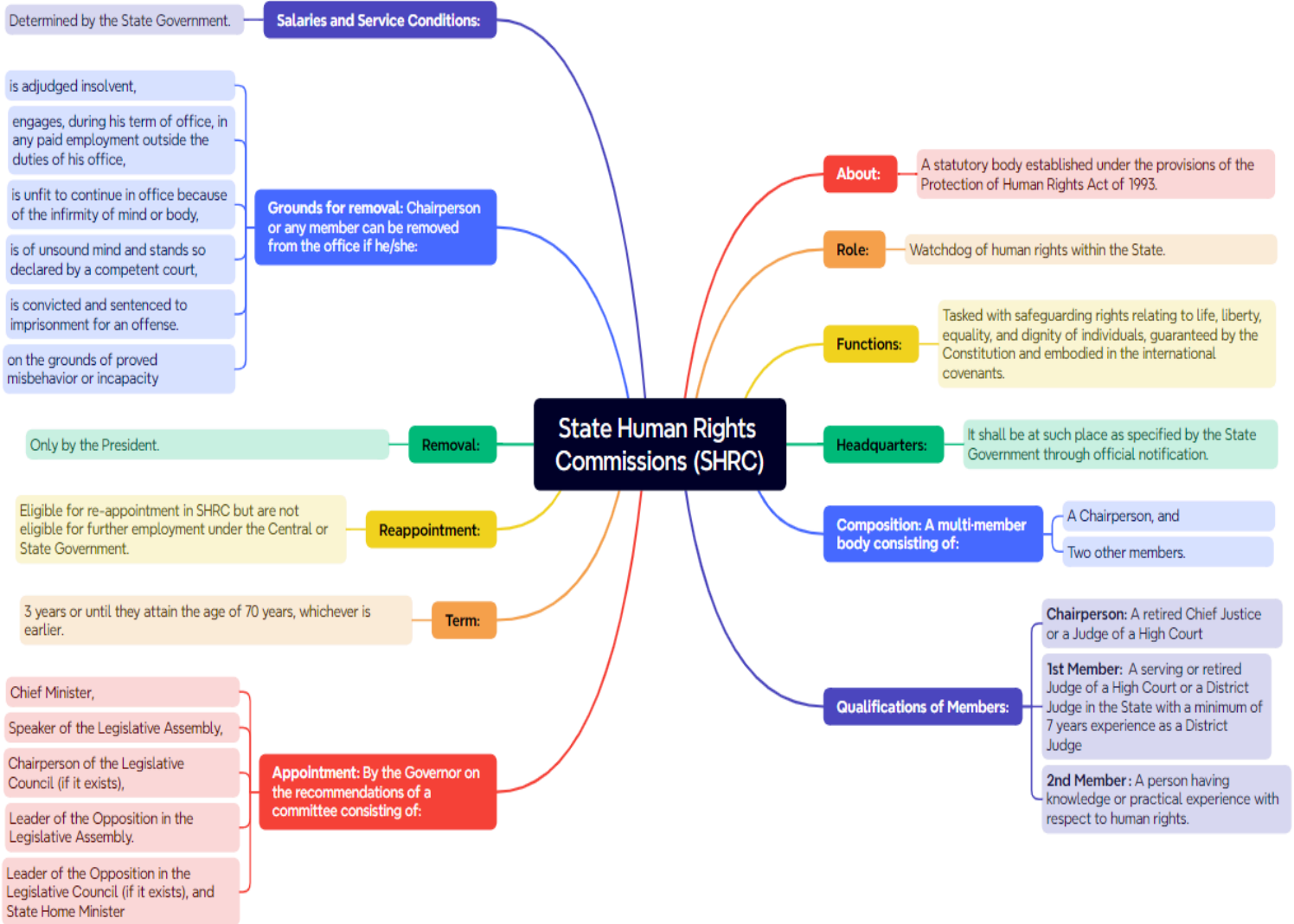
- A. Article 14 and the provisions under the 42nd Amendment to the Constitution.
- B. Article 17 and the Directive Principles of State Policy in Part IV.
- C. Article 21 and the freedoms guaranteed in Part III.
- D. Article 24 and the provisions under the 44th Amendment to the Constitution.



Polity

5. State Human Rights Commissions (SHRC) - The Hindu

Relevance: Statutory, Regulatory and various Quasi-judicial Bodies



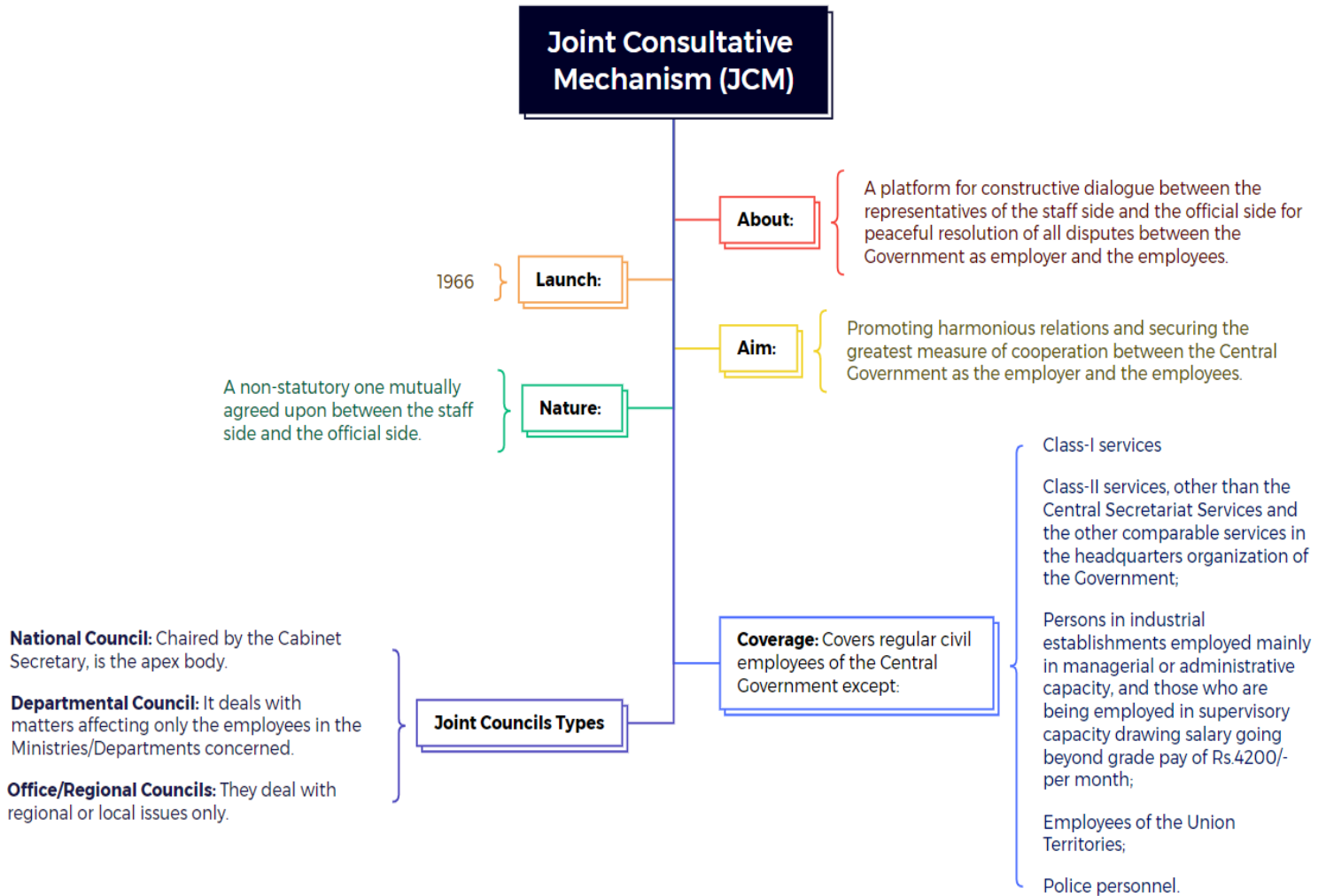
6. PM Modi to meet unions of govt. Employees - The Hindu

Relevance: Statutory, Regulatory and various Quasi-judicial Bodies

Context

For the first time in the last 10 years, Prime Minister will meet the staff representatives in the national level Joint Consultative Mechanism (JCM) of the Union government employees and the Personnel Ministry.

Joint Consultative Mechanism (JCM)



World Affairs

7. Not neutral, India on the side of peace, says Modi in Ukraine - The Hindu

Relevance: International Relations

Context

The war in Ukraine was high on the agenda in the meeting between Indian Prime Minister and Ukraine President with External Affairs Minister saying India was “willing to do whatever we can” to end the conflict“.

About the meet

- **Agreements signed:**

- Humanitarian assistance by India for high-capacity development projects
- Cooperation in agriculture and food industry
- Cultural cooperation
- An agreement on medicines and drugs towards regulation and quality control aspects.



- **Commitments of India:**

- Focus on peaceful resolution through dialogue and diplomacy, as a part of which, India has attended the Summit on Peace in Ukraine, held in Burgenstock, Switzerland.
- Reiterated the need for sincere and practical engagement between all stakeholders to develop innovative solutions that will have broad acceptability and contribute towards early restoration of peace.
- Formation of Inter-Governmental Commission to rebuild trade which has gone down in recent times.

- **India's aid:** India has handed over 10 BHISHM cubes. India has earlier handed over 17 tranches of humanitarian assistance, mostly medicines, to Ukraine.

8. Assessing Ukraine's deep incursion in Russia: why, what happens now - Indian Express

Relevance: Effect of Policies and Politics of Developed and Developing

Countries on India's interests, Indian Diaspora

Context

Ukrainian President recently said Ukrainian troops continue to capture territory and Russian soldiers in Russia's Kursk Oblast since the launch of Ukraine's surprise incursion into the region more than two weeks ago.

Probable objectives of the incursion

- **A BARGAINING CHIP:** Ukraine wants to use the captured territory as a bargaining chip for any future negotiation with Russia.
- **TO BOOST MORALE:** Ukraine wanted to boost the morale of its people and troops after failing to stop the Russian advance in the east.
- **BATTLEFIELD TACTIC:** The incursion could be a tactic to force Russia to divert its forces from the hottest battlefields in eastern Ukraine, where they are coming close to fulfilling their goal of capturing all of the Donetsk region.

Status of the incursion

- **Ukrainian claims in Russia:** Ukraine has taken control of almost 1,300 sq km of Russian territory.
- **Impact:** The operation has forced Russia to evacuate nearly 200,000 people from the region. Ukraine has reportedly captured hundreds of Russian conscripts, and has destroyed several bridges over the Semy river,.
- **Technological prowess:** Ukraine's ability to neutralise Russian drones by creating some sort of a counter-drone bubble had helped.

9. India, US sign key defence supply pact as Rajnath begins 4-day visit - Indian Express

Relevance: International Relations

Context

As Indian Defence Minister reached US on a four-day official visit, India and US on Thursday signed two key pacts — a non-binding Security of Supply Arrangement (SOSA) and a Memorandum of Agreement regarding Assignment of Liaison Officers.

Security of Supply Arrangement (SOSA)

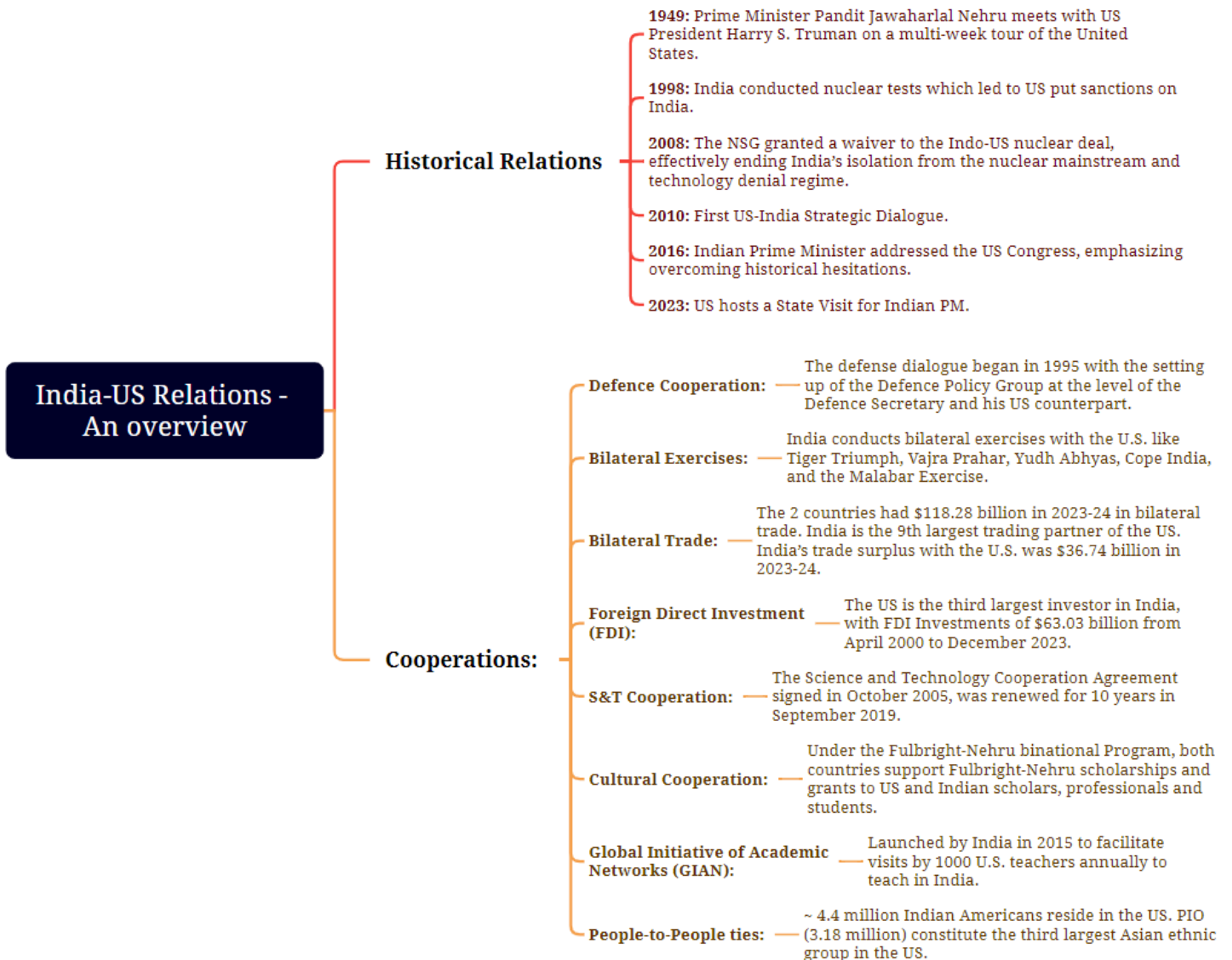
- **About:** It will mandate the US and India to provide reciprocal priority support for goods and services that promote national defence.
- **Provision:** It will enable both countries to acquire the industrial resources they need from one another to resolve unanticipated supply chain disruptions to meet national security needs.
- **India as a SOSA partner:** India is the 18th SOSA partner of the US after Australia, Canada, Denmark, Estonia, Finland, Israel, Italy, Japan, Latvia, Lithuania, the Netherlands, Norway, Republic of Korea, Singapore, Spain, Sweden, and the UK.

- **Significance:** SOSA represents a pivotal moment in the US-India major defence partner relationship and will be a key factor in strengthening the Defence Technology and Trade Initiative (DTTI) between the two countries.

Memorandum of Agreement regarding Assignment of Liaison Officers

- **About:** The MoU progresses on an earlier decision between the two sides to increase sharing of information between India and the US.
- **Significance:** It will entail posting of Indian armed forces officers in key strategic US Commands. India would deploy the first Liaison Officer to the Headquarters Special Operations Command in Florida, US.

India-US Relations - An overview



Economy

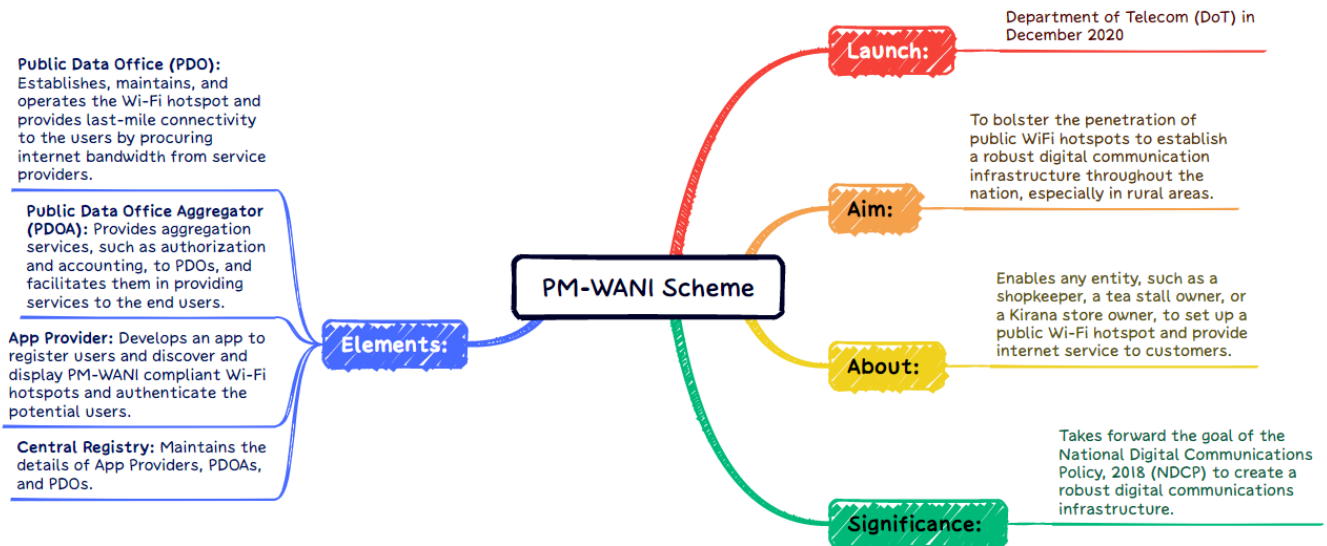
10. Trai proposes reduction in high internet costs by telcos, ISPs under PM Wani - Indian Express

Relevance: Indian Economy and issues

Context

The Telecom Regulatory Authority of India (Trai) recently proposed reduction in broadband connection rates charged by telcos and Internet service providers (ISPs) from public data offices (PDOs) under the Prime Minister Wi-Fi Access Network Interface (PM Wani) programme.

PM-WANI Scheme



Benefits	Challenges
<ul style="list-style-type: none"> • Can expand Internet access in rural and remote areas. • Can provide an affordable and convenient option for internet access. • Can stimulate innovation and competition in the internet market. 	<ul style="list-style-type: none"> • Bandwidth availability • Managing user numbers • Device compatibility • Maintaining data security and privacy. • Security threats - data leakage, hacking, and malware. • Market share and revenue loss for Mobile telecom companies • Expanding & maintaining PM-WANI in rural and remote areas with low internet demand and high operational costs

11. All India Initiative on Creative Economy (AIICE) - PIB

Relevance: Indian Economy and issues

Context

Recently an All India initiative on creative economy was launched.

All India initiative on creative economy

- **Organiser:** Indian Chamber of Commerce
- **Aim:** To provide a platform where the creative industries of India can come together and collaborate on various matters related to the creative economy.
- **Supported by:** Ministry of Petroleum and Natural Gas

Creative Economy

- It is an emerging concept based on the interplay between human creativity and ideas and intellectual property, knowledge and technology.
- It includes advertising, architecture, arts and crafts, design, fashion, performing arts, electronic publishing, etc.
- Status: India's creative economy is worth \$30 billion and employs 8% of the working population

12. 'Space sector contributed ₹20,000 crore to India's GDP over the last decade' - The Hindu

Relevance: Indian Economy and issues

Context

India's space sector has directly contributed about \$24 billion (₹20,000 crore) to India's GDP over the last decade. It has directly supported 96,000 jobs in the public and private sector. India's space force was 2.5 times "more productive" than the country's broader industrial workforce. These "preliminary findings" were given by Novaspaces, a European consultancy.

Findings of the report

- **Contribution of India's space sector:** Directly contributed about \$24 billion (₹20,000 crore) to India's GDP over the last decade.
- **Job creation:** Directly supports 96,000 jobs in the public and private sector.
- **Profit:** For every dollar produced by the space sector, there was a multiplier effect of \$2.54 to the Indian economy.
- **Size of Indian Space economy:** With \$13 billion invested in the last decade it is the 8th largest space economy (in terms of funding) in the world.
- **Contribution of satellite communications:** 54% to the space economy, followed by navigation (26%) and launches (11%).
- **Companies in the Indian space sector:** India has 700 such companies including 200 start-ups.
- **Revenue generation:** \$6.3 billion in 2023, which was about 1.5% of the global space market.

Environment

13. Cauvery body seeks Centre's nod to conduct environment assessment - The Hindu

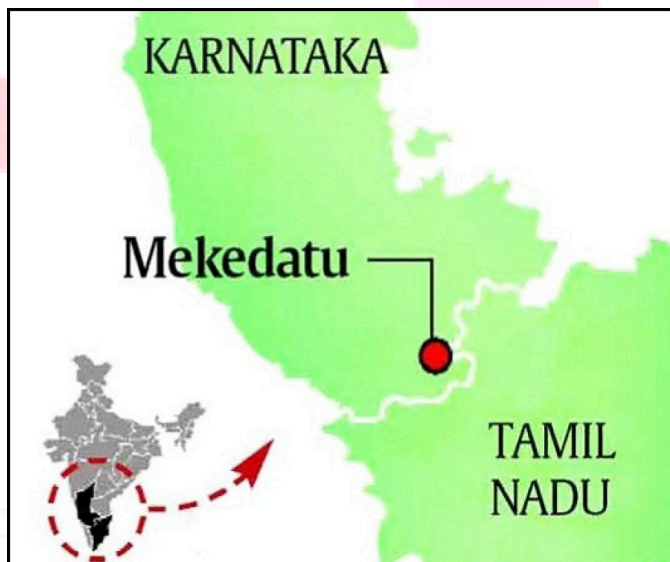
Relevance: Conservation, Environmental Pollution and Degradation

Context

Seeking to revive the issue of clearance for the Mokedatu balancing reservoir-cum-drinking water project, Karnataka's Cauvery Neeravari Nigam Limited (CNNL) has approached the Union Ministry of Environment, Forest and Climate Change for approval of the terms of reference for conducting an Environment Impact Assessment and drawing up an Environment Management Plan. Tamil Nadu is opposed to the project.

Mekedatu project

- **About:** A multi-purpose (drinking water and power) project proposed by Karnataka, which involves building a balancing reservoir near Kanakapura in Ramanagara district, Karnataka.
- **Location:** About 90 km away from Bengaluru and 4 km ahead of the border with Tamil Nadu at the confluence of the Cauvery River with its tributary Arkavathi.
- **Dimensions:** A 99-metre-high, 735-metre-long concrete gravity dam, an underground powerhouse, and a water conductor system.
- **Expected capacity:** 66,000 TMC (thousand million cubic feet) of water
- **Significance:** Expected to supply over 4 TMC of water to Bengaluru city for drinking purposes.
- **Issue:** Tamil Nadu has claimed that the project is against the interest of the state's water requirement.



Cauvery/ Kaveri River

- **About:** One of the major rivers of southern India.
- **Origin:** Brahmagiri Hill of the Western Ghats in southwestern Karnataka, at an elevation of 1.341m (4,400 ft.) above mean sea level.
- **States:** Karnataka and Tamil Nadu
- **Mouth:** Bay of Bengal through two principal mouths.

- **Total length:** 800 km.
- **Boundaries:**
 - **West:** Western Ghats
 - **East and south:** Eastern Ghats
 - **North:** Ridges separating it from the Krishna basin and Pennar basin on the north.
- **Extension:** Tamil Nadu, Karnataka, Kerala, and the Union Territory of Puducherry
- **Drainage area:** 81,155 Sq.km
- **Left bank tributaries:** Harangi, the Hemavati, the Shimsha, and the Arkavati.
- **Right bank tributaries:** Lakshmantirtha, the Kabbani, the Suvarnavati, the Bhavani, the Noyil, and the Amaravati.
- **Dams:**
 - Krishna Raja Sagara Dam
 - Mettur Dam
 - Banasura Sagar Dam (Kabini River, a tributary of Kaveri River).



14. India's first tagging of horseshoe crabs kicked off by Zoological Survey of India and Odisha Forest Dept. - The Hindu

Relevance: Conservation, Environmental Pollution and Degradation

Context

The Zoological Survey of India (ZSI) and the Odisha Forest Department have joined hands to tag horseshoe crabs along the State's coast to understand the population and habitat utilisation for its conservation and management. Horseshoe crabs are one of oldest living creatures on the Earth, and a valuable species medicinally.

Horseshoe Crabs

American Horseshoe Crab:
Vulnerable

Tri-spine Horseshoe Crab:
Endangered

**Coastal and Mangrove
Horseshoe Crabs:** Data Deficient

IUCN Red List Status:



Horseshoe Crabs

Schedule IV.

**Wildlife Protection Act,
1972 Status:**

About:

Ancient marine arthropods, also known as "living fossils," that inhabit shallow coastal waters with soft sandy or muddy bottoms.

Specification:

Closely related to scorpions and spiders, not crabs, despite their name.

Species:

American Horseshoe Crab: Eastern coast of the USA and in the Gulf of Mexico; Vulnerable (IUCN).

Tri-spine Horseshoe Crab: Endangered species found in the Indo-Pacific region.

Coastal Horseshoe Crab: Indo-Pacific species found in coastal waters of India, Southeast Asia, China, and Japan.

Mangrove Horseshoe Crab: Sundarbans mangroves of West Bengal and other parts of the Indo-Pacific.

India's species: *Tachypleus gigas* and *Carcinoscorpius rotundicauda* found along the northeastern coast, particularly in Odisha and West Bengal.

15. Gentoo penguins - Indian Express

Relevance: Conservation, Environmental Pollution and Degradation



Gentoo penguins

Scientific name:

Pygoscelis papua

Habitat:

Southern Hemisphere between 45° and 65° south latitude.

Distributions:

Antarctic Peninsula and several sub-Antarctic islands, with a significant number on the Falkland Islands in the South Atlantic Ocean.

Features:

2 white wedges around their eyes, connected by a line across the head. Their heads are mostly black, adorned with small flecks of white feathers.

Habitat:

Found along shorelines which enables the penguins to quickly access food sources while staying close to their nests.

IUCN Red List status:

Least Concern

16. Plant found in Idukki identified as new species of genus Gongronema - The Hindu

Relevance: Conservation, Environmental Pollution and Degradation

Context

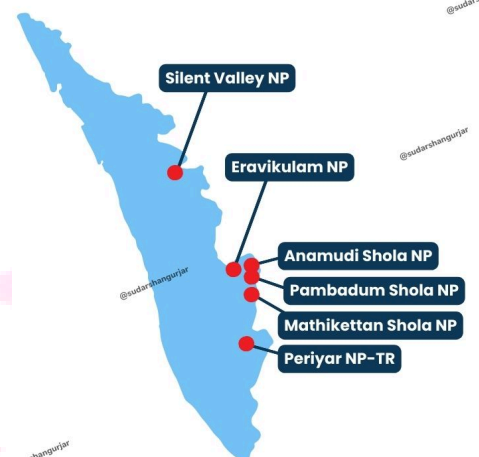
A plant spotted in Idukki district has been identified as an entirely new species of the genus Gongronema. It is the first time Gongronema has been reported from south India. Spotted during a survey in the Pampadum Shola National Park in 2019, the plant has been named Gongronema sasidharanii after N. Sasidharan, a former scientist of the Kerala Forest Research Institute, Peechi, for his contributions to floristics.

Gongronema sasidharanii

- **About:** A new species of plant discovered in Pampadum Shola National Park, Idukki District, Kerala.
- **Appearance:** A plant with smooth stems and small urn-shaped creamy white to purplish-green flowers.
- **Species of genus Gongronema in India:** 3 species found in northeast India, Uttar Pradesh, Punjab, and West Bengal.

Pampadum Shola National Park

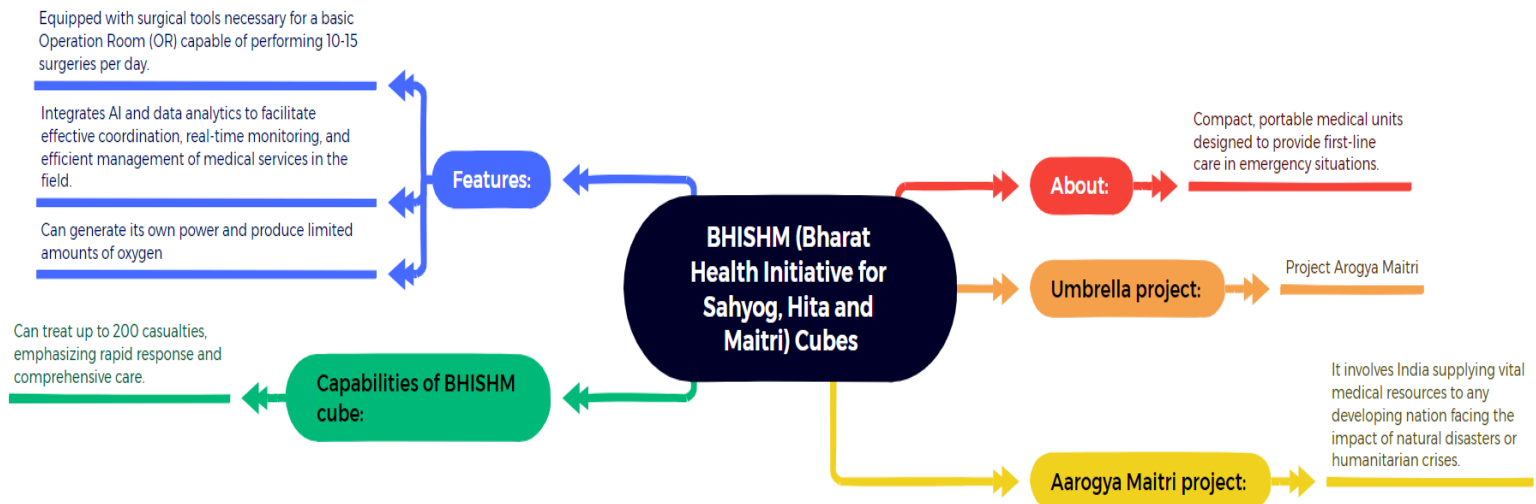
- **Location:** Eastern part of the Southern Western Ghats in Idukki District, Kerala.
- **Area:** ~ 12 sq km
- **Literal meaning of Pampadum Shola:** The forest where the snake dances
- **Average elevation:** 1600-2400 m
- **Climate:** A misty and cloudy climate throughout the year, & receives heavy rain during the North-East monsoon.
- **Vegetation:** Evergreen forests, moist deciduous forests, shola grasslands, and semi-evergreen.
- **Flora:** 22 species of trees, 74 species of herbs and shrubs, and 16 species of climbers.
- **Fauna:** Tigers, leopards, giant gizzard squirrels, the rarely spotted flying squirrels, Nilgiri Tahr, and spotted deer, Nilgiri marten, the only species of marten found in South India & ~ 100 species of butterflies.



Sci and Tech

17. BHISHM (Bharat Health Initiative for Sahyog, Hita and Maitri) Cubes - Indian Express

Relevance: Achievements of Indians in Science & Technology



18. ISRO: Chandrayaan-4 design final, samples from Moon by 2027 - Indian Express

Relevance: Achievements of Indians in Science & Technology

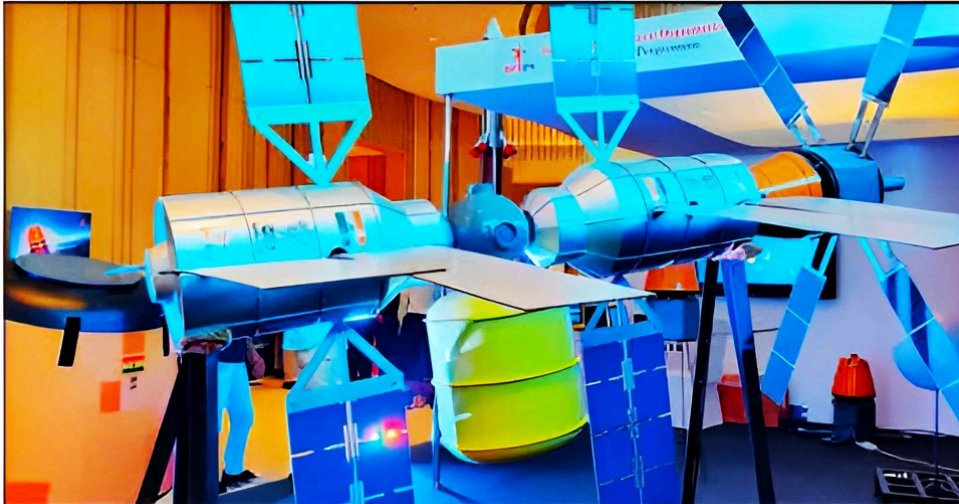
Context

The designs of India's next mission to the Moon, Chandrayaan-4 — which will bring rock and soil samples back to the Earth — has been finalised, and will most likely happen in 2027.

Chandrayaan-4 sample return mission

- **Modules:** It will have five separate modules. The Chandrayaan-3 spacecraft had three modules — the propulsion module (or the engine), a lander and a rover.
- **Stages:**
 - After getting into lunar orbit, two of the modules will detach from the main spacecraft and make a landing on the Moon.
 - They will help each other in collecting samples from the lunar surface.
 - One of the modules will launch itself from the Moon's surface and travel back to the main spacecraft in the lunar orbit.
 - The samples will be transferred, and then flown back to an Earth re-entry vehicle that will be launched separately from the ground.

- The samples will be transferred again, and it is this re-entry vehicle that will bring them back to the Earth.
- **Significance:** Docking of space modules twice - when the modules fly back from Moon to unite with main spacecraft, and when the samples are transferred to re-entry vehicle. ISRO has never docked spacecraft earlier.
- **Docking:** A process where two spacecraft moving at extremely high speeds are aligned in a precise orbit and joined together.



A model based on initial plans of the proposed space station planned by India

Why docking technology is important:

▶ Technology will allow spacecraft to exchange materials, humans: Important for space station & human missions beyond Gaganyaan

▶ Will enable re-fuelling of existing spacecraft, orbit serving

▶ Will allow Isro to replace parts/payloads on satellites already in orbit

▶ Eventual goal is to be able to shift humans from one vehicle to another

Chandrayaan-3 exceeds primary mission objectives

Initial goals of India's third lunar mission:

- Soft-land on Moon, rollout rover & conduct in-situ experiments

Additional achievements through experiments:

- Lunar hop by Vikram (lander) on Aug 23: Showed Isro could reignite engines on lunar surface
- Return of propulsion module to Earth orbit: Showed Isro could bring spacecraft back from Moon

“ Sample return mission is much more complex as it'll have many more manoeuvres: Collect samples and place them in a canister, return of that unit to the unit that will take off from Moon and reach Moon's orbit where it needs to dock with a spacecraft that will return to Earth's orbit. After this, the unit needs to separate and dock to a spacecraft in Earth's orbit, which will eventually make a re-entry



S Somanath | ISRO CHAIRMAN

19. Drug delivery method can improve fungal infection treatment - PIB

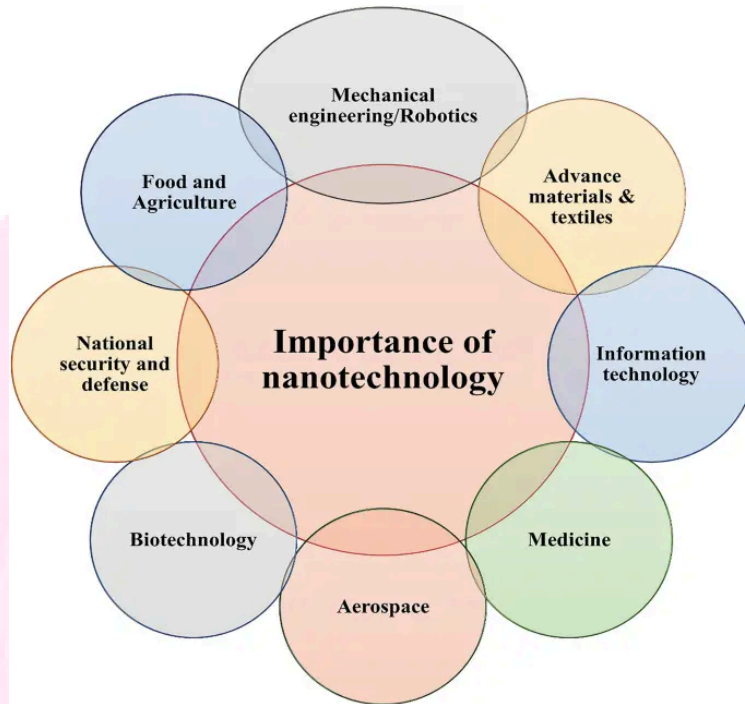
Relevance: Achievements of Indians in Science & Technology

Context

A unique method developed of drug delivery can prove useful to patients suffering from asthma, cystic fibrosis, or previous lung disease, human immunodeficiency virus (HIV), cancer, or those exposed to corticosteroid medications for an extended duration.

Nanotechnology

- **About:** It involves the manipulation of atoms and molecules at the nanoscale, typically within the range of 1 to 100 nanometers, to create structures, devices, and systems with unique properties.
- **Nanoparticles:** Ultra-small particles with a high surface area-to-volume ratio, which gives them unique physical and chemical characteristics.



Nikkomycin loaded polymeric nanoparticles

- **Nikkomycin:** A chitin synthesis inhibitor produced by Streptomyces bacteria loaded onto polymeric nanoparticles to target fungal infections.
- **Chitin:** Main component of fungal cell walls, absent in the human body, making it an ideal target for antifungal drugs.
- **Aim:** The delivery system leverages this difference to disrupt fungal growth.
- **Impact:**
 - Effective against Aspergillus flavus and Aspergillus fumigatus, the fungi responsible for pulmonary aspergillosis.
 - Inhibits fungal growth without causing cytotoxic (cell-damaging) or hemolytic (red blood cell-damaging) effects
- **Applications:** Treating patients of like asthma, cystic fibrosis, HIV, cancer, or those on long-term corticosteroid therapy, who are at higher risk of fungal infections.

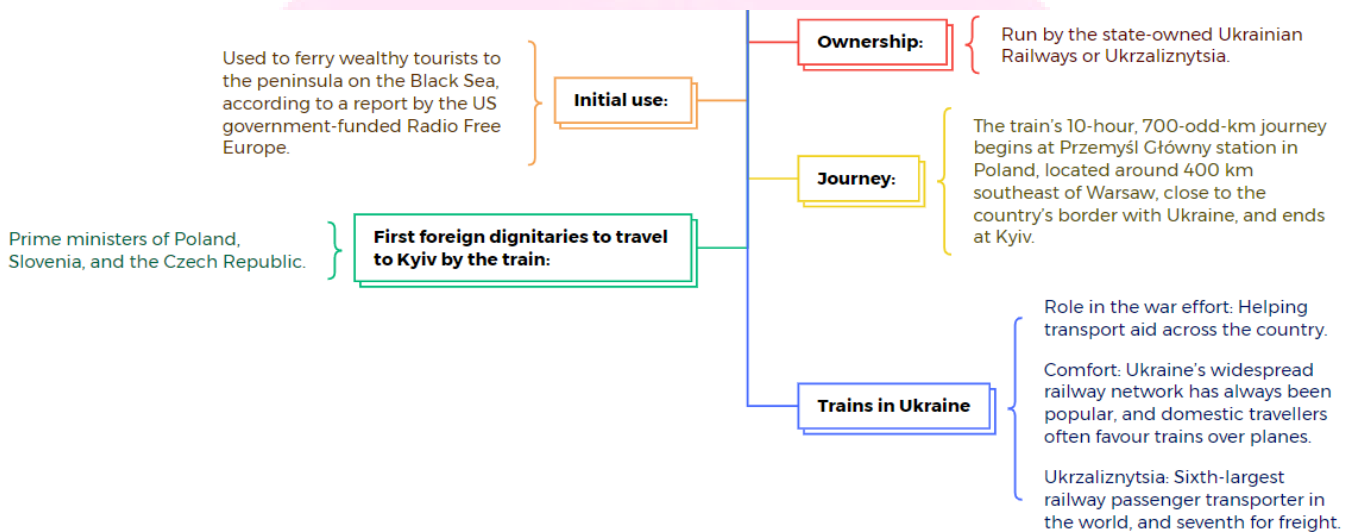
Miscellaneous

20. What is 'Rail Force One', the train PM Modi took from Poland to Ukraine? - Indian Express

Context

Prime Minister recently arrived in Ukraine's capital Kyiv from neighbouring Poland by train, an unusual mode of transport for a head of government, but one that has been used earlier by other global leaders as well.

Rail Force One Train



21. World Audio Visual & Entertainment Summit (WAVES) - The Hindu

Context

Union Minister of Information and Broadcasting recently launched 25 challenges as part of the 'Create in India Challenge – Season 1' for the World Audio Visual & Entertainment Summit (WAVES).

WAVES

- **About:** An international summit organized by the Ministry of Information & Broadcasting.
- **Edition:** First edition from 20-24 November 2024 in Goa.
- **Nodal agency:** Entertainment Society of Goa
- **Other partners:** Federation of Indian Chambers of Commerce & Industry (FICCI) and the Confederation of Indian Industry (CII).
- **Aim:**
 - A pivotal forum for fostering dialogue, trade collaboration, and innovation within the evolving media and entertainment industry.
 - To showcase India as a hub for innovation and excellence in the media and entertainment sector