

December - 10

## TNPSC BITS

- ❖ The 14th Asia-Oceania Meteorological Satellite Users' Conference (AOMSUC-14) was held in New Delhi.
- ❖ The Central Board of Indirect Taxes and Customs (CBIC) has organised a two day global India Authorised Economic Operator (AEO) programme in association with World Bank in New Delhi.
- ❖ The Uber has launched its Shikara (small boats) services on Dal Lake in Srinagar, to improve eco-tourism and heritage transportation in Jammu and Kashmir.
- ❖ India and the UK have sealed a framework agreement to co-design and co-produce electric propulsion systems to be used in futuristic warships.
- ❖ Nepal and China signed the execution framework for the Belt and Road Initiative (BRI) in Beijing.
- ❖ The 16th GRIHA Summit, organized by GRIHA Council was held in New Delhi, with the theme "Accelerating Climate Action in the Built Environment".
- ❖ Inland Waterways Authority of India's Intermodal Terminal (IMT) at Kalughat in Bihar has received five-star SVAGRIHA rating from GRIHA council.
- ❖ Delhi chief minister inaugurated an underground shooting range at the National Cadet Corps (NCC) Bhawan in Rohini.
- ❖ Pooja Sharma, who has performed funeral rites for over 4000 people, has been named on BBC's list of 100 inspiring and influential women across the globe for the year 2024.
  - Aruna Roy and Vinesh Phogat from India have made to the list.

## TAMIL NADU

### Abathsahayeswarar temple

- ❖ The 1,300-year-old Abathsahayeshwarar Temple in Thukkatchi in Thanjavur district has been chosen by UNESCO to receive the Award of Distinction – 2023.
- ❖ The temple is believed to have been constructed by Kings Vikrama Chola and Kulothunga Chola, is said to have had five prakarams previously.
- ❖ The village was known as Vikrama Chozheeswaram and Kulothunga Chola Nallur.
- ❖ It was Kulothunga who was the first to establish an idol for Sarabeshwarar, which is why this deity is called Aadhi Sarabeshwarar.

- ❖ Tamil Nadu had granted a subsidy of ₹100 crore per year to restore and renovated temples over 1000 years old.



## Tamil Nadu Model for Reducing Elephant Attacks

Tamil Nadu is using AI to prevent elephant deaths on railway tracks

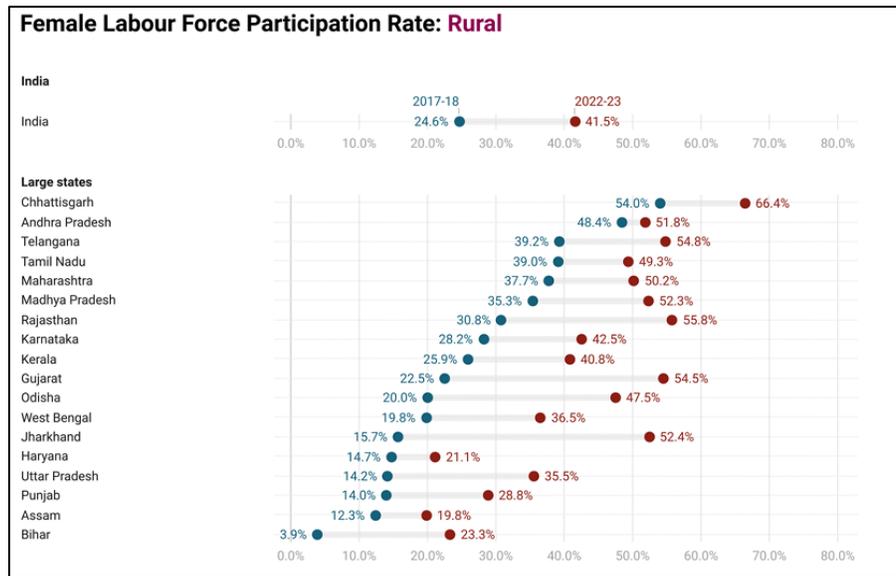


- ❖ Karnataka directed Forest Department officials to study the Tamil Nadu model for controlling the wild elephant menace in the state.
- ❖ Currently, the proven solution to mitigate the elephant menace is the installation of railway barricades, which costs approximately ₹1.5 crore per kilometre.
- ❖ However, there is a limitation in procuring the sufficient railway tracks for this purpose.

- ❖ In Tamil Nadu, steel rope fences have been installed as a barrier, costing ₹45 lakh per kilometre.
- ❖ Using locally available materials and minimizes environmental disruption compared to railway barricades.

## NATIONAL

### Female Labour force participation 2017-2023



- ❖ Rural female labour force participation rate has increased from 24.6% to 41.5% between 2017-2018 and 2022-2023 at the national level.
- ❖ This suggests an overall growth of 69% in a span of 5 years.
- ❖ States like Jharkhand, Bihar and Nagaland have witnessed tremendous growth.
- ❖ The urban female labour force participation rate has also increased by 25% from 20.4% to 25.4% between 2017-2018 and 2022-2023 at the national level.
- ❖ Gujarat has witnessed the notable growth of 63% while Tamil Nadu has seen a marginal rise in urban female LFPR.
- ❖ The report also found a significant rise in female LFPR among married women, especially in some of states like Jharkhand, Arunachal Pradesh, Nagaland and Rajasthan.

### Oilfields (Regulation and Development) Amendment Bill, 2024

- ❖ The Rajya Sabha passed the Oilfields (Regulation and Development) Amendment Bill.



- ❖ It aimed at delinking petroleum operations from mining operations.
- ❖ It is broadening the scope of the expression “mineral oils” and introducing the concept of “petroleum lease” among other provisions.
- ❖ India is believed to hold yet-to-find potential of 13 billion tons of oil equivalent.
- ❖ In the Oilfields (Regulation and Development) Act, 1948, petroleum and natural gas were the only two defined as mineral oils.
- ❖ This Bill expands the definition to include coal bed methane, oil shale, shale gas, shale oil, tight gas, tight oil, and gas hydrate, but does not include coal, lignite and helium occurring in the petroleum process.
- ❖ Subsequently, the Bill alters the previously used mining lease to introduce a ‘petroleum lease’ which allows companies to explore, prospect (search for oil and gas fields), produce, make merchantable, and dispose of mineral oils.

## Amendments Proposed to **THE OILFIELDS (REGULATION AND DEVELOPMENT) ACT, 1948**

The present global energy scenario and the hydrocarbon landscape has dramatically changed. Hence, there is a need to amend the Act to reflect current realities, national priorities, promote Ease of Doing Business (EoDB), decriminalize provisions and align India's Exploration and Production (E&P) framework with practices of competing geographies.

### **AI-based bedroll inspection**

- ❖ The Indian Railways has implemented an Artificial Intelligence-based system to inspect and sort linens.

- ❖ The AI-powered Linen Inspection and Sorting Assistant (LISA) was developed by the Pune division.
- ❖ It is designed to ensure 100% quality inspection of bed sheets used in trains.

### HIGH-TECH IN TRAINS

INDIAN RAILWAYS' PUNE DIVISION HAS DEVELOPED AI-POWERED LINEN INSPECTION AND SORTING ASSISTANT (LISA)

First pilot installation of LISA at Ghorpadi Integrated Coaching Complex in Pune



LISA meticulously inspects each bed sheet for defects, stains or damage

The system will inspect and sort linens, such as bed sheets and towels provided to passengers in AC coaches

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Advanced AI algorithms ensure precise and reliable inspection results

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It can process large volumes of linens quickly

The technology streamlines Railways operations, reduces manual labour, and elevates the standard of passenger amenities

## INTERNATIONAL

### Ban of rare minerals export

	<p><b>Gallium</b></p> <p>31 <b>Ga</b> 69.732</p>	<p>Used in:</p> <ul style="list-style-type: none"> <li>Semiconductors</li> <li>LEDs and lighting</li> <li>Solar panels</li> <li>High-frequency electronics</li> <li>Cooling systems</li> </ul>
	<p><b>Germanium</b></p> <p>32 <b>Ge</b> 72.64</p>	<p>Used in:</p> <ul style="list-style-type: none"> <li>Fibre optics</li> <li>Semiconductors</li> <li>Infrared optics</li> <li>Solar panels</li> <li>Alloys</li> </ul>
	<p><b>Antimony</b></p> <p>51 <b>Sb</b> 121.760</p>	<p>Used in:</p> <ul style="list-style-type: none"> <li>Flame retardants</li> <li>Lead alloys</li> <li>Semiconductors</li> <li>Tracer round ammunition</li> <li>Semiconductors</li> </ul>

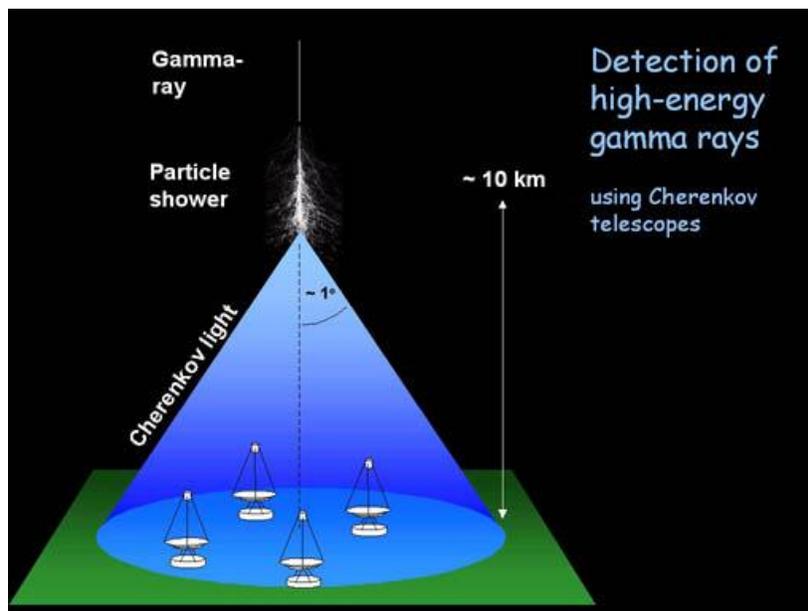
- ❖ China has banned the exports of three key rare minerals — gallium, germanium, and antimony to the United States.
- ❖ They are mostly used in computers, defence, and renewable energy technology.

- ❖ China produces 60% of the world's germanium and 80% of gallium.
- ❖ Recently the US prohibited certain types of chips and machinery and added more than 100 Chinese companies to a restricted-trade list.

## SCIENCE AND TECHNOLOGY

### Most energetic cosmic rays ever

- ❖ Group of Scientists at the High Energy Stereoscopic System (HESS) observatory in Namibia, have discovered the most energetic cosmic rays ever found.
- ❖ These are being produced by mysterious sources relatively close to Earth.
- ❖ The rays were observed at the energies all the way up to 40 teraelectronvolts (TeV) or 40,000 times the energy of visible light.
- ❖ Cosmic rays are discovered in 1912, by Austrian physicist Victor Hess.
- ❖ They rays are high-energy particles produced by the sun, supernovas, rapidly spinning pulsars, and other, unknown sources.



### World's First Self-Driving Satellite

- ❖ China has successfully launched the world's first 'self-driving' satellites.
- ❖ These satellites have been designed to autonomously maintain or change their flight paths without ground intervention.
- ❖ Once operational, the satellites will provide high-resolution, all-day, all-weather radar imagery.

- ❖ It will enable the monitoring of natural disasters such as earthquakes and floods, tracking deforestation, and carrying out military surveillance.



### **Heat Shock Protein 70 (HSP70)**



- ❖ Scientists from Jawaharlal Nehru University (JNU) have made a new discovery that could change malaria and Covid-19 treatment.
- ❖ They identified a human protein, Hsp70, as a critical factor in the spread of diseases like malaria and Covid-19.
- ❖ Hsp70 (Heat Shock Protein 70) is a type of molecular chaperone.
- ❖ It is a protein that plays a vital role in helping other proteins fold into their proper shapes and preventing misfolding.

- ❖ By targeting Hsp70, we can disrupt the Pathogens' ability to replicate and protect themselves from the immune system.

## STATES

### Tato-I Hydro Electric Project

- Cabinet approves **Rs.1750 cr** for construction of **Tato-I Hydro Electric Project** in Shi Yomi District of Arunachal Pradesh
- Project to be completed in approximately **4 years**
- With installed capacity of **186 MW (3 x 62 MW)**, it would produce **802 Million Units of energy**
- Will improve the **power supply** position in Arunachal Pradesh and help in balancing of the **national Grid**
- Project to be implemented through a JV Company between **North Eastern Electric Power Corporation Ltd.** and **Government of Arunachal Pradesh**



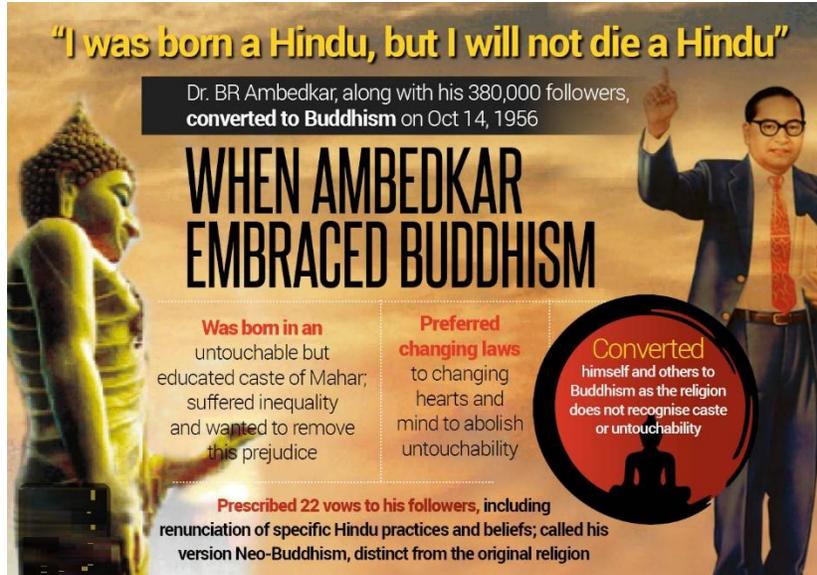
- ❖ The Centre has approved investing Rs 1750 crores for the Tato-I Hydro Electric Project (HEP) in Arunachal Pradesh.
- ❖ The project will be located in Shi Yomi District and is expected to be completed within 50 months.
- ❖ With an installed capacity of 186 MW (3 x 62 MW), the Tato-I HEP will generate 802 million Units (MU) of electricity annually.

## IMPORTANT DAYS

### Mahaparinirvan Diwas 2024 - December 06

- ❖ Mahaparinirvan Diwas commemorates the death anniversary of Dr Bhimrao Ramji Ambedkar.
- ❖ He passed away on December 6, 1956.
- ❖ This year marks the 69th Mahaparinirvan Diwas.

- ❖ The term “Mahaparinirvan” is interpreted from the Buddhist Philosophy which represents the state of nirvana which is achieved after death.
- ❖ In 1956, Dr. Ambedkar converted to Buddhism with thousands of his followers.



**“I was born a Hindu, but I will not die a Hindu”**

Dr. BR Ambedkar, along with his 380,000 followers, converted to Buddhism on Oct 14, 1956

## WHEN AMBEDKAR EMBRACED BUDDHISM

**Was born in an** untouchable but educated caste of Mahar; suffered inequality and wanted to remove this prejudice

**Preferred changing laws** to changing hearts and mind to abolish untouchability

**Converted** himself and others to Buddhism as the religion does not recognise caste or untouchability

**Prescribed 22 vows to his followers, including** renunciation of specific Hindu practices and beliefs; called his version Neo-Buddhism, distinct from the original religion

### **All India Civil Defense and Home Guards Day 2024 - December 06**



- ❖ The Home Guard was raised in the erstwhile Bombay Province on December 6, 1946.
- ❖ It is a voluntary force to assist the police in controlling civil disturbance and communal riots.
- ❖ Following the 1962 Chinese aggression, the central government had advised the states and Union Territories to merge their existing voluntary organisation into one uniform voluntary force.
- ❖ Home Guards are raised under the Home Guards Act and Rules of the states and Union Territories.

- ❖ The total strength of Home Guards in the country is 5,73,793 against which the raised strength is 4,86,401.
- ❖ The organization is spread over all states and Union Territories except in Kerala.

## MISCELLANEOUS

### 2024 airline rankings

- ❖ India's largest airline, IndiGo, has been ranked (103) among the world's worst airlines in the 2024.
- ❖ Brussels Airlines topped the list and followed by Qatar Airways and United Airlines (8.04).
- ❖ Air India, the only other Indian airline ranked, placed 61<sup>st</sup>. among 109 airlines.

