

## mmWave

### ❖ Context

- The Satcom Industry Association-India (SIA) has voiced concerns over the Government's plan to include the mmWave bands in the 5G spectrum auction.

### ❖ What is mmWave

- Millimetre Wave band or mmWave is a particular segment of radio frequency spectrum that ranges between **24 GHz and 100 GHz**.
- This spectrum has a **shorter wavelength**, and is apt to deliver greater speeds and **lower latencies** thus making **data transfer efficient** and seamless
- However, **27.5-31 GHz and 17.7-21.2 GHz** bands have been **preserved for satellite based broadband services** by the **International Telecommunication Union (ITU)**.

### ❖ Role of mmWave in 5G

- Though 5G services can be deployed using **lower frequency** bands, when it comes to data speeds, these bands **fail to hit peak potential**. So, mmWave is needed for a true 5G experience.

### ❖ Satellite-based broadband service

- It is the **emerging third class of internet service** (broadband and mobile network). Which uses **Low-Earth Orbit (LEO) satellites** to provide broadband to both urban and rural users.
- Providers, like, SpaceX's **Starlink** and Bharti Airtel's **OneWeb** are some of the players in this market.
- Their service could also be used for **weather predictions**.

### ❖ Concerns of SIA

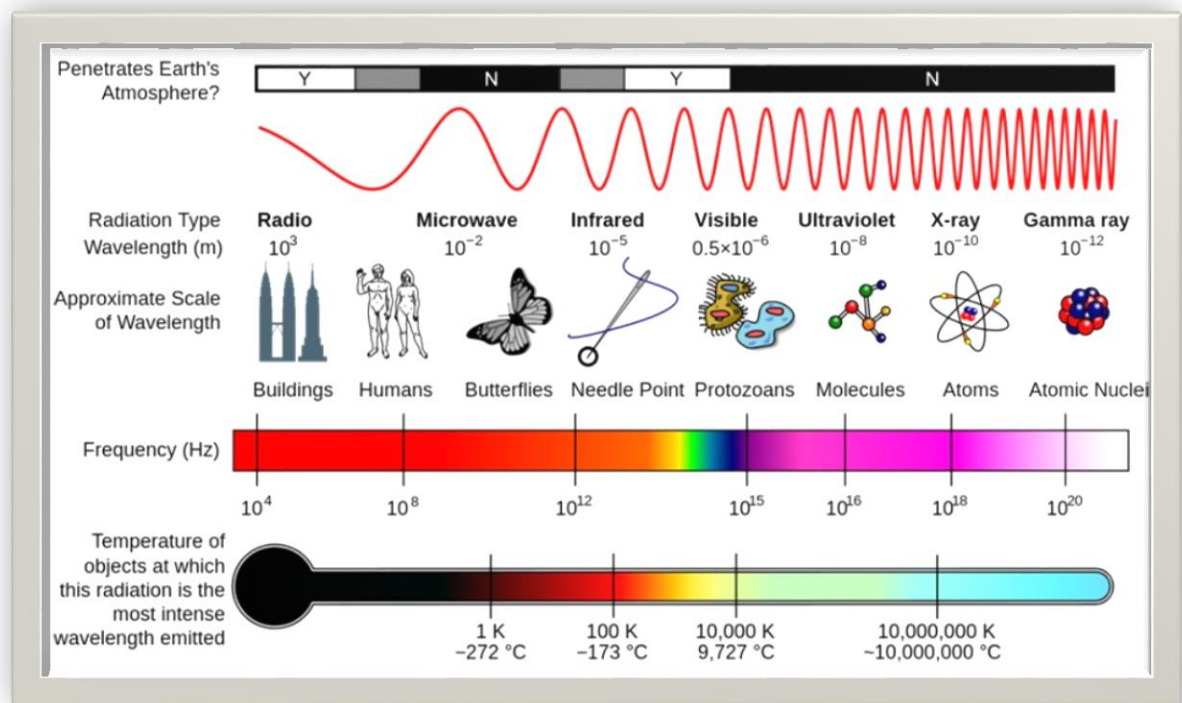
- According to an IEEE, "the 24.25-27.5 GHz band had been the subject of controversy due to **out-of-band emissions into the passive satellite band** used for weather satellites at 23.6-24 GHz.
- **Providing excess spectrum** may result in some of the **bands going unsold**, or even worse, **underutilized** by terrestrial players at the expense of satellite-based service providers.
- It will result in a **massive loss to the Indian economy** of up to **\$184.6 billion by 2030**, along with the loss of foreign direct investment (FDI) and employment generation benefits.

### ❖ About ITU

- **The oldest international organization** established in **1865**
- **A specialized agency of UN** related to ICT

### ❖ Radio Frequency

- It is the oscillation rate of an alternating electric current or voltage or of a magnetic, electric or electromagnetic field or mechanical system
- Its frequency ranges from **20 KHz to 300 GHz**



## ONDC

### ❖ Context

- DPIIT launched **ONDC national rollout strategy** - 'Reimagining the future of Digital Commerce with ONDC'

### ❖ Key Highlights

- It refers to the **Open Network Digital Commerce**
- Aimed at providing alternative to the **proprietary e-commerce platforms**, '**democratizing**' digital commerce
- India has a **trillion dollar retail economy**
- **Small business** would be able to use **any ONDC compatible app** instead of being governed by specific platform centric policies
- An **advisory council** to accelerate its adoption has been set up including Infosys founder Nandan Nilekani and National Health Authority CEO RK Sharma
- According to the Department, **Dynamic Pricing, Inventory Management and Optimization of Delivery cost** will be essential for its success



## Face to Face Centres



## Criminalising Marital Rape

### ❖ Context

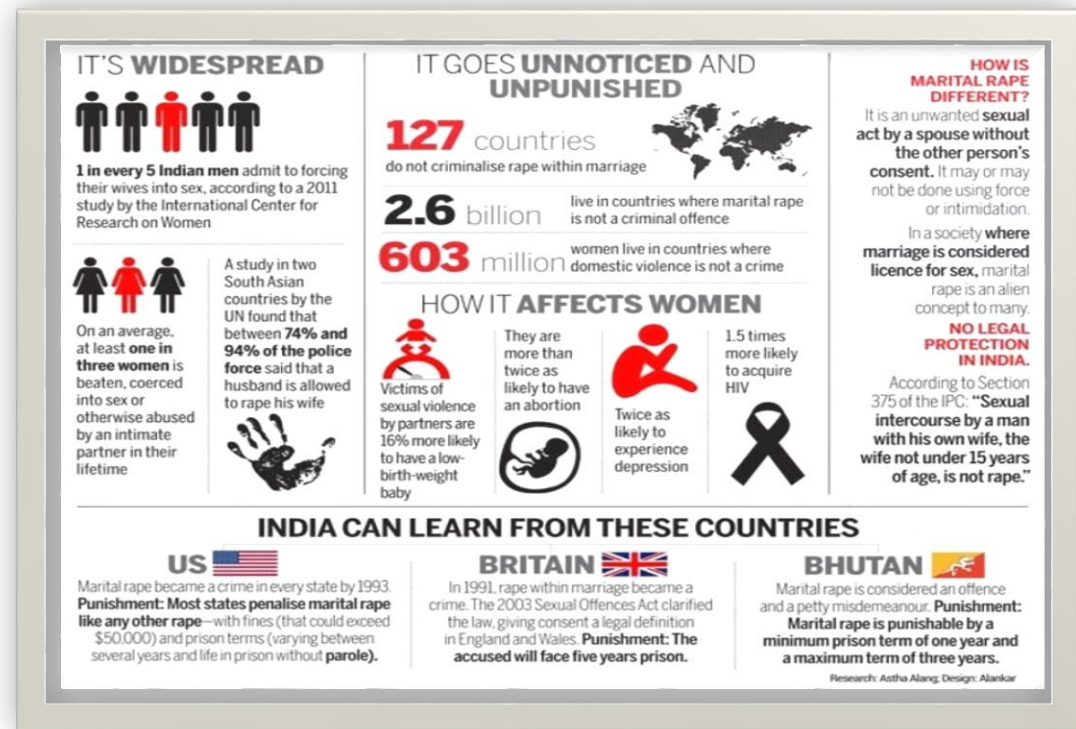
- The Delhi High Court is hearing a clutch of **petitions seeks to amend the criminal law**, which includes Section **375 (rape)** of the Indian Penal Code (IPC).

### ❖ Key Highlights

- The Centre told the Delhi High Court that it was considering a **“constructive approach”** to the issue of criminalising marital rape
- It had sought suggestions from the State governments, the Chief Justice of India, MPs and others on **comprehensive amendments to the criminal law**.
- **Justice J. S. Verma Committee** which were constituted in the aftermath of the horrific Nirbhaya gang rape in 2012, **recommended**:
  - The **exception** for marital rape be **removed**.
  - Law must “specify that a **marital or other relationship between the perpetrator or victim is not a valid defence against the crimes of rape or sexual violation**”
- **Australia** became the first common law country to pass reforms in 1976 and after it, many **Scandinavian and European countries** made rape in marriage a criminal offence.

### ❖ Legal Provisions

- **Marital rape exception-** The exception to Section 375 of the IPC, which exempts forceful sexual intercourse by a man with his own wife from the offence of rape, provided the wife is **above 15 years of age**.



## Suspension of MLAs

### ❖ Context

- Recently, 12 Maharashtra BJP MLAs have gone to the Supreme Court against their **year-long suspension from the Assembly**.
- The Supreme Court has observed that the suspension of 12 BJP MLAs from the Maharashtra Assembly for a full year is prima facie **unconstitutional, and “worse than expulsion”**.

### ❖ Key Highlights

- 2 BJP MLAs filed pleas challenging their one-year suspension from the Maharashtra **Legislative Assembly for allegedly misbehaving with the presiding officer**.
- **Each state has their individual rules for the conduct of assembly**. These rules provide for the suspension of MLAs.
- Under **Rule 53 of the Maharashtra Legislative Assembly Rules, 1960**, only the Speaker has the power to suspend MLAs indulging in unruly behavior.
- Therefore, the **motion to suspend cannot be put to vote** as this would allow the Government to suspend as many Members of Opposition as it sees fit.

### ❖ Constitutional ground behind this suspension

- **Article 190 (4) of the Constitution-** if for a **period of 60 days**, a member of a House, without its permission, is absent; the House may declare his or her seat vacant.
- Suspension of MLAs beyond this period would lead to their **disqualification**.
- **Rules 373, 374, and 374A of the Rules of Procedure and Conduct of Business in Lok Sabha** provide for the withdrawal of a member whose conduct is “grossly disorderly”, and suspension of one who abuses the rules of the House or willfully obstructs its business.
- The maximum suspension as per these Rules is **“for five consecutive sittings or the remainder of the session, whichever is less”**.
- Similar Rules also are in place for state legislative assemblies and councils

### Face to Face Centres



## News in Between the Lines

### Kathak



#### ❖ Context

- Recently, the famous Kathak dancer Pandit Munna Shukla and Padma Vibhushan awardee, Pt Birju Maharaj, passed away.

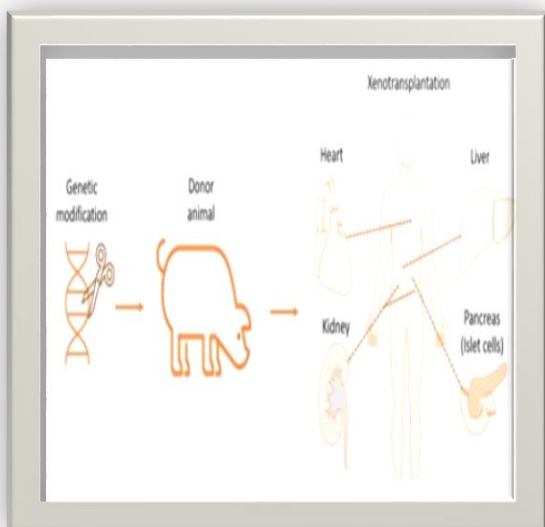
#### ❖ Key Highlights

- Birju Maharaj was a descendant of the Maharaj family of Kathak dancers, which includes his two uncles, Shambhu Maharaj and Lachhu Maharaj, and his father and guru, Acchan Maharaj.
- Birju Maharaj was drummer and also a singer par excellence, having command over Thumri, Dadra, Bhajan and Ghazal.
- Pandit Munna Shukla worked in the dance-drama Shan-e-Mughal, Inder Sabha, Ameer Khusro, Anga Mukti, Anvesha, Bahar, Tratak, Kraunch Badh, Dhuni, among others.

#### ❖ About Kathak Dance

- Kathak is the traditional dance form of Uttar Pradesh.
- Kathak derives its name from the 'Kathika' or storyteller who recites verses from the epics with music and gestures.
- During the Mughal times, it was influenced by Islamic features, especially in costume and dancing style.
- Kathak is accompanied by dhrupad music. During the Mughal period, Taranas, Thumris, and Gazals were introduced.
- The stories in Kathak's performance generally tend to be about the Hindu god Krishna (or in some cases Shiva or Devi), and the stories come from sources such as the Bhagavata Purana, or the Indian Epics.
- In the 20th century Lady Leela Sokhey revived the classical style of Kathak.
- Lachha Maharaj, Shambu Maharaj and Birju Maharaj etc are the main proponents of Kathak.

### Xenotransplantation

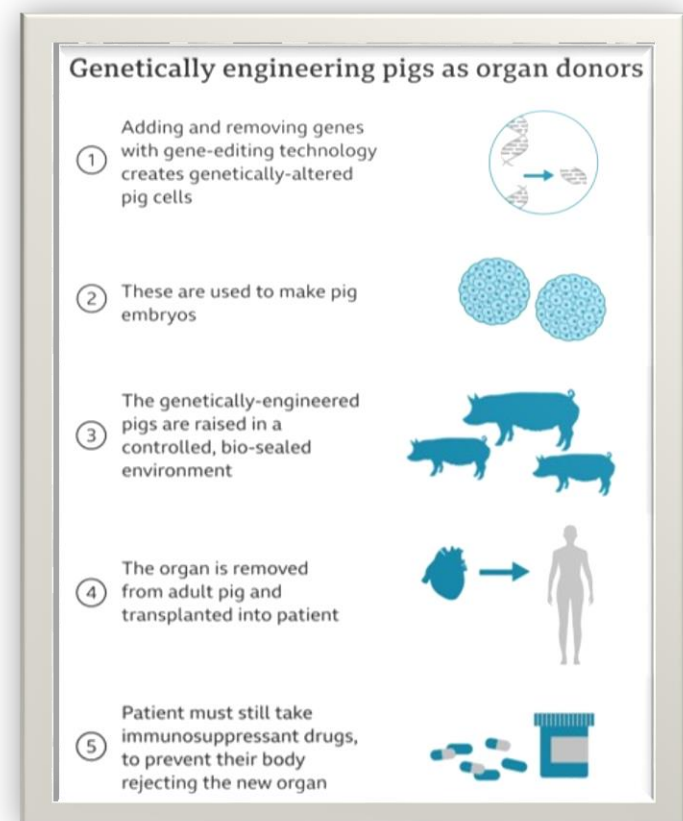


#### ❖ Context

- Recently the doctors in the USA transplanted a genetically altered pig heart into a patient which is referred to as xenotransplantation (from animals to humans).

#### ❖ Key Highlights

- Xenotransplantation is any procedure that involves the transplantation of either live cells, tissues, or organs from a nonhuman animal source, or human body fluids, cells, tissues or organs into a human recipient.
- Such cells, tissues or organs are called xenografts or xenotransplants.
- It offers a potential treatment for end-stage organ failure, a significant health problem in parts of the industrialized world.
- It also raises many novel medical, legal and ethical issues.



### Face to Face Centres



## Olive Ridley Turtle



### ❖ Context

- Tarkarli beach (Maharashtra), famous for water adventure sports, has recorded an Olive Ridley Turtle nest for the first time

### ❖ Olive Ridley Turtle

- They are the **smallest and most abundant** of all sea turtles found in the world.
- They are **carnivores** and get their name from their olive colored carapace.
- They are best known for their **unique mass nesting called Arribada**, where thousands of females come together on the same beach to lay eggs.
- They can be found in warm waters of the **Pacific, Atlantic and Indian oceans** and the **Odisha's Gahirmatha Marine Sanctuary** is known as the world's largest rookery (colony of breeding animals) of sea turtles.

### ❖ Protection Status

- **Wildlife Protection Act, 1972: Scheduled 1**
- **IUCN RedList: Vulnerable**
- **CITES: Appendix I**

## Data Purity Project



### ❖ Context

- Recently, Tamil Nadu's Registrar of Cooperative Societies stated that out of 49 lakhs of loan against jewellery, 35 lakhs would not be eligible for loan waiver

### ❖ Key Highlights

- It is the outcome of the government's project aimed at **rationalized distribution** of welfare schemes
- It is aimed at **right targeting** of the schemes ruling out any bogus or fake claims
- It operates on the principle of **data-driven, evidence based decision support system**
- The authorities found that as for Social Security Pension Schemes which cover destitute senior citizens, differently-abled persons, widows and agricultural labourers, 8,800 beneficiaries were not alive.

## India-China Trade



### ❖ Context

- It crossed **\$125.6 BN** in 2021 from **\$92.8 BN** in 2019

### ❖ Key Highlights

- India imports - **\$97.5 BN** (greater than the total trade in 2019) and exports - **\$28.9 BN**
- **Medical supplies from Oxygen concentrators to PPEs, over last 2 years** have also contributed to the surge in import
- Exports (56%) have risen much greater than imports (30%) (as compared to 2019)

India's major imports from China	India's major exports to China
Electrical and mechanical machinery	Iron Ore
Active Pharmaceutical Ingredients (APIs)	Cotton
Auto Components	Other raw material based commodities

## Lokhari Temple



### ❖ Context

- Union cultural Minister announced that a **10th century stone idol of Goat Head Yogini** that had been illegally removed from a temple in Lokhari, Banda, Uttar Pradesh in 1980s is being returned to India from London

### ❖ Key Highlights

- The sculpture is of a goat headed Yogini that originally belonged to a group of stone deities in sandstone
- A similar sculpture of the buffalo-headed **Vrishanana Yogini**, apparently stolen from the same temple at Lokhari village, had been recovered and repatriated by the Embassy of India, Paris in 2013. The three Vrishanana Yogini were then installed in the National Museum, New Delhi
- Lokhari is a small village situated in the Mau sub-division in **Banda** district of **Bundelkhand, Uttar Pradesh**.
- **Yoginis are a group of powerful female divinities associated with the Tantrik mode of worship.**
- They are **worshiped as a group, often 64 and are believed to possess infinite powers.**

## Purple Revolution



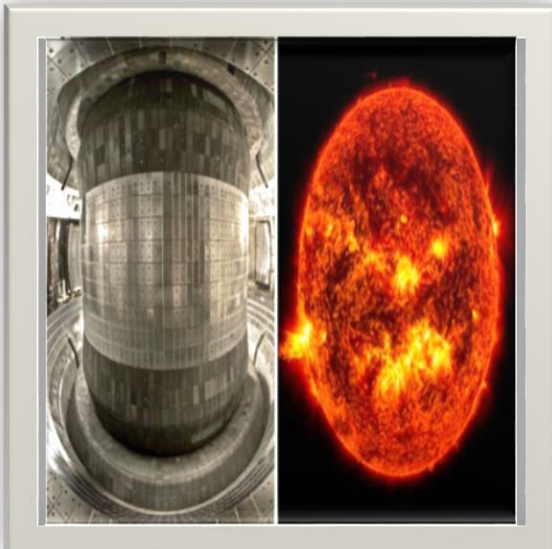
### ❖ Context

- Gaining popularity of lavender crop cultivation for agricultural startups in J&K

### ❖ Key Highlights

- Under **Aroma Mission** launched by DST, CSIR's Jammu based lab **Indian Institute of Integrative Medicine** introduced high value essential oil bearing lavender crops in Doda, Kishtwar, Rajouri, Ramban, Pulwama Districts of J&K
- Under Phase-I of the mission, CSIR has covered 46 aspirational districts and 44,000 persons have been trained

## China's 'artificial sun'



### ❖ Context

- China's 'artificial sun' EAST achieved a peak temperature of 288 million degrees Fahrenheit, which is over ten times hotter than the sun.

### ❖ Key Highlights

- **China's Experimental Advanced Superconducting Tokamak (EAST)**, which mimics the energy generation process of the sun, set a new record after it ran at 216 million degrees Fahrenheit for 101 seconds,
- The latest feat is a significant step in the quest to unlock clean and limitless energy, with minimal waste products.
- The breakthrough is significant progress, and the ultimate goal should be keeping the temperature at a stable level for a long time,
- ❖ **So, what is China's 'artificial sun' EAST?**
- **EAST reactor** is an **advanced nuclear fusion** experimental research device located at the Institute of Plasma Physics of the Chinese Academy of Sciences (**ASIPP**) in Hefei, China.
- The purpose of the artificial sun is to replicate the process of **nuclear fusion**, which is the same reaction that powers the sun.
- Apart from the EAST, China is currently operating the **HL-2A reactor** as well as **J-TEXT**.
- The EAST project is part of the **International Thermonuclear Experimental Reactor (ITER)** facility, which will become the world's largest nuclear fusion reactor when it becomes operational in 2035.
- The project includes the contributions of several countries, **including India, South Korea, Japan, Russia and the United States.**

