

- **E-commerce exports** enable businesses to sell directly to customers across the world. It helps businesses transcend boundaries and get access to a much larger pool of customers.
- **Factors driving the growth of India's e-commerce exports**
 - ⊖ Global e-commerce exports are estimated to touch **\$2 trillion by 2025**.
 - ⊖ **Product diversity & innovation and favorable policy ecosystem.**
 - ⊖ **The ability of Indian entrepreneurs** to gauge the requirements of specific markets and offer customized products.
 - ◆ **About 90% of e-commerce exporters** are small and medium-sized businesses.
- **Government initiatives to boost India's e-commerce exports**
 - ⊖ **Foreign Trade Policy 2023 increased the value limit of exports** through couriers from ₹5 lakh to ₹10 lakh per shipment.
 - ⊖ **Digitized import and export clearances of courier parcels** through the launch of the Express Cargo Clearance System (ECCS).
 - ⊖ **India Post and Shiprocket (e-commerce enablement platforms) collaboration** to enhance e-commerce exports by leveraging India Post's extensive presence.
 - ⊖ **Simplified regulatory framework** for e-commerce exports of jewellery through courier mode.
- **DGFT is attached office of the Ministry of Commerce and Industry** responsible for **administering laws regarding foreign trade.**

NASA successfully experiment's Deep Space Optical Communications (DSOC)

- **DSOC** is a system that consists of a **flight laser transceiver, a ground laser transmitter, and a ground laser receiver.**
 - ⊖ It is the **NASA's first demonstration of optical communications beyond the Earth-Moon system.**
 - ◆ In **optical communications**, light is used to carry the signal, instead of electrical current.

- **DSOC system was launched with Psyche spacecraft** and is configured to **send high-bandwidth test data to Earth.**

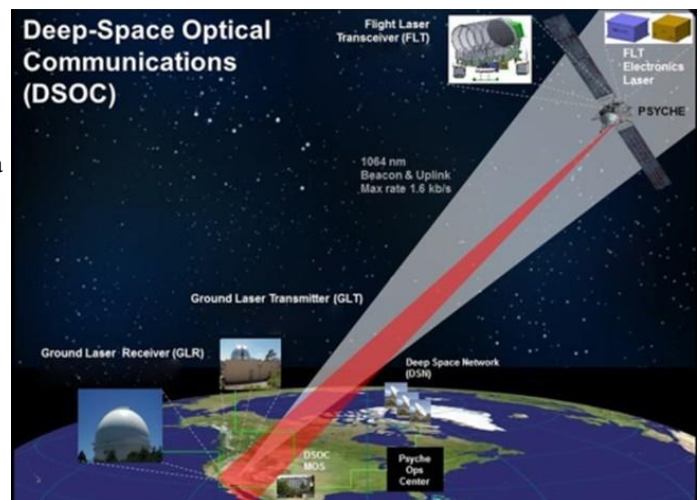
- ⊖ The experiment aims to **demonstrate data transmission rates 10 to 100 times greater** than the **state-of-the-art radio frequency systems** used by spacecraft today.

- **Significance of DSOC:**

- ⊖ It uses **near-infrared light packs** which facilitates higher rate of data transmission.
- ⊖ **High-definition imagery transmission.**
- ⊖ It will enable **human exploration of deep space like sending humans to Mars.**
 - ◆ **Deep space** starts just past the Moon's orbit and includes the solar system and beyond.

- **NASA's Psyche Mission (2023)** was launched to study a **metal-rich asteroid** that is Psyche Asteroid, located in the main asteroid belt between **Mars and Jupiter.**

- ⊖ **Asteroid Psyche** is unique as it appears to be the exposed **nickel-iron core** of an early planet, one of the building blocks of our solar system.



➤ HC declared it **unconstitutional and violative of Part III (Fundamental rights)** of the Constitution of India.

⊖ It also said that Act violates **Constitutional Morality**.

◆ **Constitutional Morality** refers to adherence to the fundamental principles of the constitution.

⊖ It said State cannot **discriminate against the individuals** on account of the fact that they do not belong to a **certain State (negative discrimination)**.

⊖ Act provided **75% reservation** to locals in **private sector jobs** (having monthly salary of less than **Rs. 30,000**).

➤ Other States like Andhra Pradesh (2019) have also enacted similar acts.

➤ **Arguments regarding Local reservation in Private Sector** (refer to box)

Arguments in favour	Arguments in against
<ul style="list-style-type: none"> ➤ Employment on the basis of domicile doesn't violate Article 15(1) because residence and place of birth are two distinct concepts. ➤ Controlling Influx of a large number of migrants in the state, competing for low-paid jobs. ➤ Local employees are more likely to spend their income locally. 	<ul style="list-style-type: none"> ➤ Violates Article 14, 15 and 16 (Right to equality) and 19 (5) (Right to freedom to practice any profession, or to carry on any occupation, trade or business). ➤ It may push businesses to migrate (due to lack skill workforce). ➤ Fuels sons-of-the-soil syndrome (preferring locals) in other states as well.

➤ **Key highlights of the report**

⊖ **Nearly all tropical glaciers, most mid-latitude glaciers, and polar regions** will disappear even if the temperature rises by 2 degrees Celsius.

⊖ Himalayas are expected to lose **50 % of today's ice** if global average temperatures touch 2°C.

⊖ The last decade has witnessed the **seven worst years of ice loss**.

➤ **The cryosphere** is the frozen part of the planet. It includes snow and ice on land, ice caps, glaciers, permafrost, sea ice, etc.

➤ **Cryosphere's Role in Global Climate**

⊖ **Earth Energy Budget:** Due to high Albedo they help to regulate Earth's temperature.

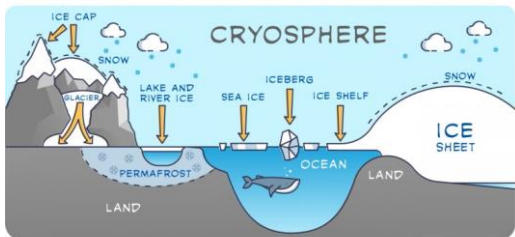
◆ Albedo is the fraction of light that a surface reflects.

⊖ **Carbon storage:** Permafrost disturbance will pour more carbon emissions into the atmosphere as it has trapped tonnes of carbon inside its soil.

⊖ **Extreme Weather Events:** melting ice strengthens extreme weather events and gives rise to sea levels across the globe.

⊖ **Water availability:** The cryosphere contains 80% of the world's fresh water in the form of glaciers, ice sheets, etc.

➤ **India's Initiatives to protect cryosphere:** National Mission for Sustaining the Himalayan Ecosystem; established a Centre for Himalayan Glaciology in Wadia institute, etc.



Pradhan Mantri Awas Yojana-Gramin (PMAY-G) completed seven years

➤ It is a centrally sponsored scheme of the **Ministry of Rural Development** launched in **2016**.

➤ **Achievements of the scheme**

⊖ **2.41 crore houses** have been handed over out of targeted **2.95 crore**.

⊖ **Around 1.5 lakh crore rupees** have been given as central assistance in last 4 years.



➤ **Key feature of the scheme**

⊖ **Aim-**To provide "pucca" houses with basic amenities to all houseless households living in kutcha and dilapidated houses by 2024.

⊖ **Selection of beneficiaries:** using the Socio-Economic Caste Census (SECC)-2011 which is verified by the Gram Sabhas.

⊖ **Financial assistance:** 100% grant of Rs.1.20 lakh (in plain areas) and Rs. 1.30 lakh (in Hilly States/North Eastern States/ Difficult areas/ UT of J&K and Ladakh/IAP/LWE districts) .

⊖ **Sharing of cost between Central and State Governments:**

◆ 60:40 in plain areas,

◆ 90:10 for two Hill States (Himachal Pradesh and Uttarakhand) and UT of Jammu and Kashmir and

◆ In other Union Territories, 100% by the central government.

➤ **Convergence with other schemes like LPG connection** under Pradhan Mantri Ujjwala Scheme

➤ **Implementation and monitoring** are carried out through an end-to-end e-Governance model - Using AwaasSoft and AwaasApp.

- **Researchers extracted embryonic stem cells** from one-week-old embryos. They modified the DNA in these cells to include a green fluorescent protein (GFP).
 - ⊖ These GFP-marked **embryonic stem cells** were then **injected into recipient embryos**.
 - ◆ Then they were implanted into **surrogate female monkeys**, which delivered offspring.
- **Embryonic stem cells (can change into any cell)** are a type of **Stem cell**.
 - ⊖ A **stem cell is a cell with the unique ability to develop into specialised cell types in the body**. Other major stem cells include-
 - ◆ **Tissue-specific (multipotent or unipotent)**: Can only change into some cells.
 - ◆ **Induced pluripotent stem cells (iPS)**: Lab-made stem cells, can change into any cell.
- A **chimera is a single organism composed of cells of more than one distinct genotype (or genetic makeup)**.
 - ⊖ **Major types of chimera**:
 - ◆ **Natural**: Animal kingdom has several examples of varying degrees of chimerism, including humans.
 - ◆ **Artificial**- It can be done through **stem cell transplant** or **bone marrow transplant**.
- **Application of recent development**:
 - ⊖ **Genetic and developmental biological studies**.
 - ⊖ Fulfilling Growing demands of organs for **transplantation** e.g. use of animal heart valves.
- **Issues**: Ethical concerns, low survival rate etc.

Also in News



Project Collaboration Agreement

The **Ministry of Ayush and the World Health Organization (WHO)** have signed the Traditional and Complementary Medicine 'Project Collaboration Agreement'.

- This is the **third 'Project Collaboration Agreement'** signed by the Ministry of Ayush with WHO.
- **Objective**:
 - ⊖ To **standardize** Traditional and Complementary Medical Systems.
 - ⊖ Integrate their quality and safety aspects into the **National Health System**.
 - ⊖ Disseminate them at the **international level**.
- **During the G20 Summit in India**, WHO conducted the first Traditional Medicine Global Summit in 2023.



Paramutations

- In a new study, researchers have **explored how paramutations work**.
- **Paramutations** are unusual mutations that can **protect humans against viruses**.
 - ⊖ Mutation is any change in the **sequence of bases in the DNA of a chromosome**.
- A paramutation is a **small chemical modification of a chromosomal protein that flips a nearby gene into a silenced state**.
 - ⊖ **Active and silenced versions** of a paramutated gene share the same DNA sequence **but their associated proteins have different modifications**.



Sea buckthorn

- **Sea buckthorn fruit** from Ladakh has been awarded a Geographical Indication (GI) tag.
- **It is the fourth GI tag in Ladakh**, after Apricot (Raktsey Karpo), Pashmina, and Ladakhi Wood Carving.
- **About Sea buckthorn**
 - ⊖ Sea buckthorn (*Hippophae rhamnoides*) is a plant found **throughout Europe and Asia**.
 - ⊖ In India, it is found above the **tree line in the Himalayan region**, generally in dry areas such as the cold deserts of Ladakh and Spiti.
- The GI tag is regulated by the **Geographical Indications of Goods (Registration and Protection) Act of 1999**.



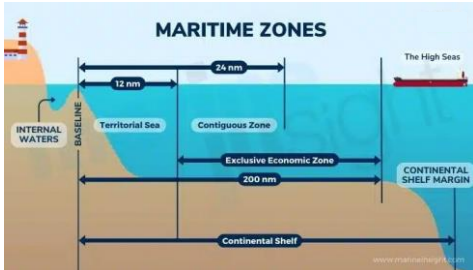
Glyphosate

- European Union allows the use of glyphosate for 10 more years.
- **About Glyphosate**:
 - ⊖ It is a **phosphonic acid** and **odourless white powder**.
 - ⊖ It is the active ingredient in **weed-killer (herbicide)**.
 - ⊖ **Concern: Non-selective nature i.e. kill crop and weeds both**, Involves health hazards and risk to human beings and animals.
- **India** has allowed its **restricted use**.
 - ⊖ There are many glyphosate-based formulations registered for use under the **Insecticides Act, 1968**.



Exclusive Economic Zone (EEZ)

- **Unsafe and unprofessional conduct by Chinese warship** in international waters off Japan's EEZ allegedly reported by Australia.
- **About EEZ**
 - ⊖ It is an area of the ocean, beyond and adjacent to its territorial sea that **extends seaward up to 200nm from its baseline**.
 - ⊖ In this area, the coastal nation has **jurisdiction over both living and non-living resources**.
 - ⊖ It is defined under the **1982 UN Convention on the Law of the Sea (UNCLOS)**.



Community Reserve

- Experts have noticed that shrinking mudflat ecosystem of Kadalundi river is impacting **Kadalundi Vallikunnu Community Reserve (KVCR)**.
 - ⊖ It is located in **Kerala** and it is India's first river front community reserve.
- **About Community Reserve:**
 - ⊖ This protected area category was **first introduced** through the **Wild Life (Protection) Amendment Act of 2002**.
 - ⊖ This protected area act as buffer zones or corridors between established national parks, wildlife sanctuaries and reserved and protected forests.
- They can be declared as **conservation areas** if they are **uninhabited** and completely owned by the Government.



PLI 2.0 Scheme for IT hardware

- Government approved 27 manufacturers under Production Linked Incentive (PLI) 2.0 Scheme for IT hardware
- **About Scheme**
 - ⊖ **Objective:** Provide **financial incentive to boost domestic manufacturing and attract large investments** in the value chain.
 - ⊖ **Target segment:** Laptops, Tablets, All in-One PCs, Servers and Ultra Small Form Factor (USFF) Laptops manufactured in India.
 - ⊖ **Incentives:** Around 5% on net incremental sales over base year.
 - ⊖ **Tenure of incentive:** 6 years during Scheme Tenure.
 - ⊖ **Applicant:** Global Company, Hybrid (Global/ Domestic) Company and Domestic Company fulfilling the eligibility criteria.



Emerging Tools in Cutting Plastic Pollution

- **Plastic credits**
 - ⊖ **Plastic credits are a form of tradable credits** that can be bought and sold by companies in order to offset their plastic waste.
 - ⊖ **It works a bit like the carbon credits.**
- **Plastic offsetting**
 - ⊖ **Based on the idea** that companies and consumers can compensate for their plastic consumption by purchasing plastic credits.
- **Plastic neutrality**
 - ⊖ It is claimed when a **company has purchased enough plastic credits to offset its entire plastic footprint** for a set period of time.

Place in News



Dominica (Capital: Roseau)

- **Dominica** has announced to create **world's first sperm whale reserve**. **Political**
- **Features:**
 - ⊖ It is an Island country of **Lesser Antilles** in eastern **Caribbean Sea**.
 - ◆ **Lesser Antilles** is a **long arc of small islands**.
 - ⊖ It lies between the Guadeloupe and **Marie-Galante** (north) and **Martinique** (south).
- **Geographical Features:**
 - ⊖ Island is of **volcanic formation**.
 - ⊖ It has a number of active volcanoes including **fumaroles (volcanic vents)**.
 - ◆ It has **Boiling Lake** which is the second-largest hot spring lake in world.
 - ⊖ **Highest Point:** Mount Morne Diablotins
 - ⊖ **River:** Layou

