

STATE OF WORLD POPULATION REPORT 2023

Why in news?

- The UN Population Fund (UNFPA) has released the State of World Population Report, 2023.
- As per the report, India is set to overtake China to become the world's most populous country by the middle of 2023.

UN Population Fund

- United Nations Population Fund (UNFPA) is trust fund under the jurisdiction of the United Nations Development Programme (UNDP).
 - UNFPA was formerly (1969–87) known as United Nations Fund for Population Activities.
- Established in 1969, the UNFPA is the largest international source of assistance for population programs.
- It is the leading UN organization for the implementation of the 1994 Programme of Action of the International Conference on Population and Development.
- In other words, UNFPA is the United Nations sexual and reproductive health agency.
 - Its mission is to deliver a world where every pregnancy is wanted, every childbirth is safe and every young person's potential is fulfilled.

Work

- UNFPA funds assistance, research, and advocacy programs in three major areas:
 - reproductive health, including family planning, safe motherhood, and the prevention and treatment of sexually transmitted diseases,
 - the population problems of developed and developing countries and possible strategies for addressing them, and
 - issues related to the status of women, including the gender gap in education.
- UNFPA assistance programs are undertaken only in response to government requests.

State of World Population Report

- It is an annual publication released by UNFPA. It provides an analysis of the world population and its various aspects such as health, education, human rights, and economic development.

- The report offers insights into population trends, challenges, and opportunities for development in different regions and countries of the world.

News Summary: State of World Population Report 2023

Key highlights of the report with respect to India

- **India is on track to be the world's most populous country**
 - India is set to overtake China to become the world's most populous country by the middle of 2023.
 - India's population is pegged to reach 142.86 crore against China's 142.57 crore.
 - The United States is a distant third, with an estimated population of 34 crore.
 - According to the UN projections, India's population is expected to grow for the next three decades after which it will begin declining.
- **Working population of India**
 - 68 per cent of India's total population is between the ages of 15 and 64 years, which is considered the working population of a country.
 - About 25 per cent is between 0-14 years; 18 per cent between 10 and 19 years, 26 percent between 10 and 24 years, and 7 per cent above 65 years.
- **Other demographic indicators**

	Population	15-64 years	65+	TFR	Life expectancy
India	1,428.6 mn	68%	7%	2.0	72.5 yrs
China	1,425.7 mn	69%	14%	1.2	79 yrs
World	8,045 mn	65%	10%	2.3	73.5 yrs

UNFPA's State of World Population Report 2023

- The average life expectancy at birth for males in India is 71 years while for females it is 74 years.
- **India in a unique position**
 - India is in a unique position in which the young and working population is larger than the population which needs care (children and the elderly).

- This is unlike countries such as Japan with a declining population and an increasing elderly population.
- Such countries are, and will be, in dire need of skilled labour, and this is something that India can provide, capitalising on its demographic dividend.
- **Population anxieties are widespread**
- Population anxieties refer to concerns or worries related to the size, growth, and distribution of human populations.
- Governments are increasingly adopting policies aimed at lowering or maintaining fertility rates.

WHAT IS THE EXOBIOLOGY EXTANT LIFE SURVEYOR (EELS)?

US space agency NASA, is developing a snake-like robot known as Exobiology Extant Life Surveyor (EELS) which it says can boost space exploration through its diverse adaptability to various terrains.



About Exobiology Extant Life Surveyor (EELS):

- **What is it?** It is a mobile instrument platform conceived to explore internal terrain structures, assess habitability and ultimately search for evidence of life.
- It is designed to be adaptable to traverse ocean-world-inspired terrain, fluidized media, enclosed labyrinthian environments and liquids.
- It is a snake-like robot that that can move through rough terrain.
- Its purpose is to examine the surface of Saturn's moon and determine whether life is present.
- EELS allows for deeper exploration into areas that were once unattainable.
- **Features:**
 - It is made of multiple, identical, segments containing both the actuation and propulsion mechanisms as well as the power and communication electronics to drive them.
 - EELS uses first-of-a-kind rotating propulsion units that act as tracks, gripping mechanisms and propeller units underwater, enabling the robot to access a plume vent exit and follow it to its ocean source.

NATIONAL TECHNICAL RESEARCH ORGANISATION (NTRO)

The Central Government recently appointed former Special Protection Group (SPG) chief as the Chairman of the National Technical Research Organisation (NTRO).



About National Technical Research Organisation (NTRO):

- It is a **technical intelligence Agency under the National Security Advisor in the Prime Minister's Office, India.**
- It was **formed in 2004** to strengthen the country's national security apparatus.
- It is under the **direct control of the Prime Minister's Office** and operates as an **autonomous organization.**
- **Primary Objective: Gather technical intelligence**, which involves intercepting and **analyzing communications signals, imagery intelligence**, and cyber intelligence.
- **Other Functions:**
 - It also **provides technical assistance to other intelligence agencies** in the country, including the Intelligence Bureau and Research and Analysis Wing.
 - It is responsible for maintaining a **database of information related to technology** and developing advanced tools and techniques for intelligence gathering.
 - It also **conducts research and development activities** in the field of technical intelligence.
- NTRO is **headed by a Chairman who reports directly to the Prime Minister of India.**
- Its **headquarters is located in New Delhi**, and it has operational centres in various parts of the country.

Key Facts about Special Protection Group (SPG):

- It is entrusted with the task of **providing proximate security to the Prime Minister of India, the former Prime Minister and their immediate family members.**
- It was **formed in 1985** after the assassination of Prime Minister Indira Gandhi as an executive body on the recommendation of the Birbal Nath committee.
- Later on, it became a statutory body under Special Protection Group Act 1988.

- **Governance:**
 - It is governed by the Cabinet secretariat of India.
 - **SPG chief is an officer of the rank of inspector-general.**
-

CINEMATOGRAPH (AMENDMENT) BILL 2023



The Union Cabinet recently approved the Cinematograph (Amendment) Bill 2023, which has provisions to curb the transmission of pirated film content on the Internet.

Why in News?

- The Cinematograph (Amendment) Bill 2019 was **introduced in the Rajya Sabha** on 12th February
- It was **referred to the Standing Committee** on Information Technology which presented its report on 16th March 2020.
- The **Cinematograph (Amendment) Bill, 2023**, was prepared after seeking public comments, followed by several rounds of stakeholder consultations.
- It **will be introduced in the Parliament** during the upcoming monsoon session.

About Cinematograph (Amendment) Bill 2023:

- It seeks to **amend the Cinematograph Act 1952**.
- It has provisions for harsher **punishment for film piracy** and the **introduction of new-age categories for classifying films**.
- **Film Classification:**
 - It has provisions to **classify films on the basis of age group instead of the current practice of rating them** "U" (unrestricted public exhibition), "A" (restricted to adult audiences), and "UA" (unrestricted public exhibition subject to parental guidance for children below the age of 12).
 - The amendments **seek to add new classifications** – 'UA-7+', 'UA-13+', and 'UA-16+' in place for 12 years.
 - It also seeks to **bring about uniformity in categorisation of films** and content across platforms.
- **Stricter Laws Against Piracy:**

- The Bill holds stricter **punishment for those responsible for piracy**. This includes **three years of imprisonment and a Rs 10 lakh penalty** for those engaged in piracy.
- Once the Bill is released, the **act of piracy will be considered an offence legally** and will include even transmitting pirated content punishable.

What is the Cinematograph Act 1952?

- It was enacted by the Parliament to **ensure that films are exhibited in accordance with the limits of tolerance of Indian society**.
- It establishes **Central Board of Film Certification (CBFC**, popularly known as the censor board) appointed by the Central Government to **sanction and certify films**.
- The **Board scrutinizes the film in its entirety** and based on the contemporary standard of Indian society following the procedure laid down under the Act.
- Board can either make a **speaking order of rejection or grant the certificate, which shall be valid for ten years**.
- The Act also **authorizes the police to conduct search and seizure** if the film is being exhibited in contravention of any of the provisions of the Act.

MISSION 50K-EV4ECO

Small Industries Development Bank of India (SIDBI) recently announced a new scheme Mission 50K-EV4ECO to boost the electric vehicle (EV) ecosystem in the country.



About Mission 50K-EV4ECO:

Under this mission, SIDBI will directly **provide loans to eligible small and medium enterprises (SMEs)** for the **purchase of EVs and developing charging infrastructure**, including battery swapping.

- It focuses on increasing the uptake of **electric two-wheelers, three-wheelers and four-wheelers** through **direct and indirect lending support** to vehicle aggregators, fleet operators and leasing companies.

Key facts about SIDBI

- It was established **under an Act of Parliament in 1990**.

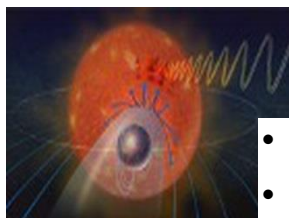
- It is the Principal Financial Institution engaged in the **promotion, financing & development of the Micro, Small and Medium Enterprises (MSMEs)** sector and coordination of the functions of the various institutions engaged in similar activities.

What are Electric Vehicles?

- It is defined as a vehicle that can be **powered by an electric motor** that draws electricity from a battery and is **capable of being charged from an external source.**
- Government of **India's initiative related to the Electric Vehicles**
 - Faster Adoption and Manufacturing of (Hybrid and) Electric Vehicles (FAME) – I and II:
 - It is currently India's flagship scheme for promoting electric mobility.
 - It was **launched in 2015.**
 - Currently in its 2nd phase of implementation, FAME-II is being implemented for a period of 3 years, from 1st April 2019 with a budget allocation of 10,000 Cr

WHAT IS YZ CETI B?

Recently, astronomers have detected a repeating radio signal from the YZ Ceti b exoplanet that suggests the presence of a magnetic field around it.



About YZ Ceti b:

- It is a rocky earth-sized **exoplanet** rotating around a small red dwarf star.
- It is barely **12 light-years** from Earth.
- The astronomers determined that the planet takes just a couple of Earth days to circle its star.

Why does the magnetic field matter?

- The survival of a planet's atmosphere may well depend on its strong magnetic field.
- The magnetic field **protects the planet's atmosphere from being eroded** by the charged particles blowing in from its star.

Key Facts about the Exoplanets

- These are also called extrasolar planets.
- These are a planetary body which is **outside the solar system** and that usually orbit a star other than the Sun.

- Exoplanets come in a wide **variety of sizes**, from **gas giants larger** than Jupiter to small, rocky planets about as big around as Earth or Mars.
- These are made up of elements similar to those of the planets in our solar system, but their mixes of those elements may differ.
- Most exoplanets are **found through indirect methods**: measuring the dimming of a star that happens to have a planet pass in front of it, called the **transit method**

NATIONAL QUANTUM MISSION: GOVT GREEN FLAGS THE MISSION TO AID R&D IN QUANTUM TECH




Why in News?

- The Union Cabinet approved the National Quantum Mission (NQM) in a bid to aid scientific and industrial research and development in quantum technology.
- The mission involves a cost of Rs 6,003.65 crore from 2023-24 to 2030-31, and aims to put India among the top six leading nations involved in the research and development in quantum technologies.

What is Quantum Technology?

- It is a class of technology (developed in the early 20th century) that **works by using the principles of quantum mechanics** - the physics of subatomic particles, including quantum entanglement and quantum superposition.
 - Hence, it is based on **phenomena exhibited by microscopic particles** (like photons, electrons, atoms, etc.) which are quite distinct from the way normal macroscopic objects behave.
 - As behavior of these microscopic particles **can't be described by Classical Physics** (based on Newtonian Mechanics), consequently Quantum Mechanics came into picture.

Strange principles often underlie quantum information science

 <p>SUPERPOSITION</p> <p>Superposition describes a particle's ability to exist across many possible states at the same time. So the state of a particle is best described as a "superposition" of all those possible states.</p>	 <p>ENTANGLEMENT</p> <p>Quantum entanglement refers to a situation in which two or more particles are linked in such a way that it is impossible for them to be described independently even if separated by a large distance.</p>	 <p>OBSERVATION</p> <p>Superposition and entanglement only exist long as quantum particles are not observed or measured. "Observing" a quantum state yields information but results in the collapse of the system.</p>
--	--	--

- **The principles behind quantum technology:**

- **Applications:** In more reliable navigation and timing systems,

more secure communications, more accurate healthcare imaging through quantum sensing (perform a measurement of a physical quantity), more powerful computing (Quantum computer), etc.

- Presently, R&D works in quantum technologies are underway in the **US, Canada, France, Finland, China and Austria.**

Quantum Technology and India:

- Professor **Satyendra Nath Bose**, Sir Chandrasekhara **Venkata Raman** and Professor **Meghnad Saha** are some stalwart Indian scientists that have contributed in the field of quantum technology.
- India is currently at the **forefront of tapping the second quantum revolution** through massive investments in the field.
- Quantum technologies & applications is **one of the 9 missions** of national importance, being driven by the Prime Minister's Science and Technology Innovation Advisory Council (**PM-STIAC**) through the Principal Scientific Advisor's office.
- In order to **leverage cutting edge scientific research** for India's sustainable development, the areas of focus would be around 4 verticals -
 - Quantum Computing and Simulations,
 - Quantum Materials and Devices,
 - Quantum Communications and
 - Quantum Sensor and Metrology.
- To address the above 4 verticals, **the Union Budget 2020-21** proposed to spend
 - ₹8,000 crore on the newly launched National Mission on Quantum Technologies and Applications (NMQTA) and
 - ₹ 3660 Crore for National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS).

What is the National Quantum Mission (NQM)?

- NQM will be led by the Department of Science and Technology (DST) for **strengthening India's R&D in the quantum arena.**