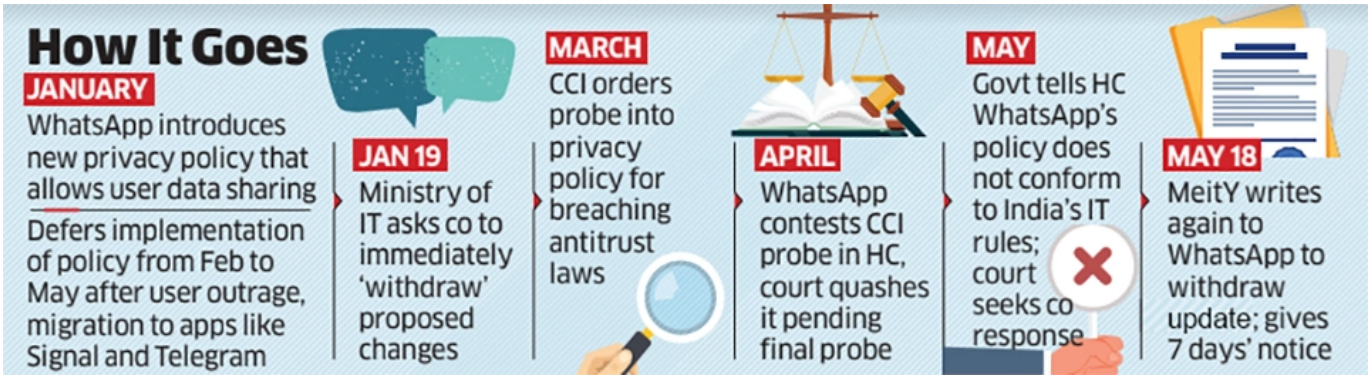
News Analysis (24 May, 2021)

Data Protection in India

Why in News

Recently, the **Ministry of Electronics and IT (MeitY)** has sent a notice to **WhatsApp** asking it to withdraw a controversial update to its privacy policy which might be a **threat to Data Protection of Indians.**



Key Points

- **About the Issue:**
    - According to **WhatsApp's updated privacy policy**, **users would no longer be able to stop the app from sharing data** (such as location and number) **with its parent Facebook** unless they delete their accounts altogether.
        - Its privacy updates are **designed to make the business interactions** that take place on its platform easier while also personalising ads on Facebook. That is how it will have to make its money.
    - According to the **Government**, the messaging app **discriminates against Indian users vis-à-vis users in Europe** on the matter of a choice to opt-out of the new privacy policy.
        - WhatsApp users in Europe can opt-out of the new privacy policy owing to the **laws in the European Union (EU) called the General Data Protection Regulation (GDPR)**, which shield them from sharing data from Facebook or grant them the power to say no to WhatsApp's new terms of service.
- **Data Protection (Meaning):**
    - Data protection is the **process of safeguarding important information from corruption, compromise or loss.**
        - **Data** is the large collection of information that is stored in a computer or on a network.
    - The **importance** of data protection **increases as the amount of data created and stored continues to grow at unprecedented rates.**
- **Need:**
    - According to the **Internet and Mobile Association of India (IAMAI)'s Digital in India report 2019**, there are about **504 million active web users and India's online market is second only to China.**
    - Large collection of information about individuals and their online habits has become an **important source of profits.** It is also a **potential avenue for invasion of privacy** because it can reveal extremely personal aspects.
        - Companies, governments, and political parties find it **valuable** because they can use it to find the most convincing ways to advertise to you online.
- **Laws for Data Protection across the Globe:**
    - **European Union:** The primary aim of the **General Data Protection Regulation (GDPR)** is to **give individuals control over their personal data.**
    - **US:** It has **sectoral laws to deal with matters of digital privacy** such as the US Privacy Act, 1974, Gramm-Leach-Bliley Act etc.

- **Initiatives in India:**
  - **Information Technology Act, 2000:**

    It provides for **safeguard against certain breaches in relation to data from computer systems.** It contains provisions to prevent the unauthorized use of computers, computer systems and data stored therein.
  - **Personal Data Protection Bill 2019:**
    - The Supreme Court maintained the **right to privacy as a fundamental right in the landmark decision of K.S. Puttaswamy v. Union of India 2017** after which the Union government had appointed **Justice B.N. Srikrishna Committee** for proposing skeletal legislation **in the discipline of data protection.**
    - The Committee came up with its report and draft legislation in the form of the **Personal Data Protection Bill, 2018.**
    - In 2019, Parliament again revised the Bill and much deviation from the 2018 Bill was evident. The new Bill was named as **Personal Data Protection Bill, 2019.**

      The purpose of this Bill is to provide for protection of privacy of individuals relating to their Personal Data and to establish a Data Protection Authority of India for the said purposes and the matters concerning the personal data of an individual.
- **Concerns Related to Personal Data Protection Bill 2019:**

  It is like a two-sided sword. While it **protects the personal data of Indians by empowering them with data principal rights**, on the other hand, it **gives the central government with exemptions** which are against the principles of processing personal data.

  The **government can process even sensitive personal data when needed**, without explicit permission from the data principals.

Way Forward

- In this digital age, data is a valuable resource that should not be left unregulated. In this context, **the time is ripe for India to have a robust data protection regime.**
- It is time that **requisite changes are made in the Personal Data Protection Bill, 2019.** It needs to be reformulated to ensure that **it focuses on user rights with an emphasis on user privacy.** A **privacy commission** would have to be established to enforce these rights.
- The **government would also have to respect the privacy** of the citizens while **strengthening the right to information.** Additionally, the **technological leaps made in the last two to three years also need to be addressed** knowing that they have the capacity of turning the law redundant.

Source:TH

Net Zero by 2050: IEA

Why in News

Recently, the **International Energy Agency's (IEA)** released its **Net Zero Emissions (NZE) Roadmap** - named **'Net Zero by 2050'.**

- It is the **World's first comprehensive energy roadmap** which comes ahead of the **United Nations Conference of the Parties (COP) 26 climate change** convention in Glasgow, Scotland in November 2021.
- **'Net zero emissions'** refers to achieving an overall balance between greenhouse gas emissions produced and greenhouse gas emissions taken out of the atmosphere.

Key Points

- **Need:**
  Climate **pledges by governments till date even if fully achieved would fall well short of what is required** to bring global energy-related **carbon dioxide (CO_2) emissions to net zero by 2050** and give the world an even chance of **limiting the global temperature rise to 1.5 °C.**
- **Aim of the Roadmap:**
  - **Examine Impact:**
    To **examine the impacts of announced NZE pledges** and what they might mean for the energy sector.
  - **New Energy Pathway:**
    To **develop a new energy-sector pathway towards achieving NZE** globally by 2050.
  - **Recommend Governments:**
    To set out key policy **recommendations for governments to act upon in the near-term, and a long-term agenda** for change to achieve net-zero goals, including with a view to reaching other **Sustainable Development Goals.**

- **Principles to be Followed:**
  - **Technology Neutrality:**

    Technology neutrality, with **adoption driven by costs, technological readiness**, country and market conditions and trade-offs with wider societal goals.

    Technology Neutrality is generally described as the **freedom of individuals and organizations to choose the most appropriate and suitable technology** to their needs and requirements for development, acquisition, use or commercialisation, **without dependencies on knowledge involved as information or data.**
  - **Universal Cooperation:**

    Universal international cooperation, in which **all countries contribute to net zero**, with an eye to a 'just transition' and where advanced economies lead.
  - **Minimizing Volatility:**

    An **orderly transition** that seeks to **minimise stranded assets** where possible, while **ensuring energy security and minimising volatility in energy markets.**
- **Milestones Set by the Roadmap:** More than **400 milestones** to guide the global journey to net zero by 2050 which include:
  - **Fossil Fuels:**

    No investment in new fossil fuel supply projects, and **no further final investment decisions for new unabated coal plants.**
  - **Vehicle sale:**

    No sales of new internal combustion engine passenger cars by **2035.**
  - **Electricity Generation:**
    - The **global electricity sector should reach net-zero emissions by 2040.**
    - It calls for annual additions of **solar power to reach 630 gigawatts by 2030,** and those of **wind power to reach 390 gigawatts.**

      Together, this is **four times the record level set in 2020.**
    - It suggests the following on global electricity generation towards 2050:
      - **714% more renewables.**
      - **104% more nuclear.**
      - **93% less coal** (and all remaining coal with **Carbon Capture and Storage (CCS)**.
      - **85% less natural gas** (with 73% of that with CCS).
- **Significance:**

  It is supposed to provide a **pathway to bridge the current gap between rhetoric and reality in reducing GreenHouse Gas (GHG) emissions** from the energy and industry sectors.

- **Criticism:**
  - **Ignorance:**
    - IEA **did not consider historical emitters**, ignoring the principle of 'climate justice'.
    - **Developed countries benefited from the Industrial Revolution** at the cost of emitting GHGs, leading to **climate change.**
    - Hence, **they have the economies to decarbonise, allowing space for poor and developing countries** to get financing and innovation organised to switch to cleaner energy options.
  - **Regulations Needed:**
    - There is potentially an **over-reliance on behavioral change to consume less energy.**
    - **Regulations will be essential** to positively motivate constructive social change in economies.

International Energy Agency

- IEA is an **autonomous Intergovernmental Organisation** established in 1974 in Paris, France.
- IEA mainly focuses on its energy policies which include **economic development, energy security and environmental protection.** These policies are also known as the 3 E's of IEA.
- India became an **Associate member of IEA in March 2017** but it was in engagement with IEA long before its association with the organization.

  Recently, India has **inked a Strategic Partnership Agreement with the IEA** to strengthen cooperation in global energy security, stability and sustainability.
- The **World Energy Outlook Report** is released by the IEA annually.
- Recently, it has released the **India Energy Outlook 2021 Report.**
- **IEA Clean Coal Centre** is dedicated to providing independent information and analysis on how coal can become a cleaner source of energy, compatible with the UN Sustainable Development Goals.

Way Forward

- The world is facing a **formidable task of transforming the energy sector within 30 years in a cost-effective manner**, even as the world economy more than doubles in size and the global population increases by 2 billion people.
- The need for the world to reach NZE by 2050 lies in the **major interim steps** that need to be taken through 2030 — **to engineer cheap and green energy from hydrogen and renewable energy while making them accessible to all.**

Source: DTE

COP 28

Why in News

Recently, the **United Arab Emirates** announced an **offer to host** the **28th session** of **Conference of Parties** (COP 28) to the **UNFCCC** in **Abu Dhabi in 2023.**

COP 26 was **postponed** in **2020** and will take place in **Glasgow,** UK in November 2021.

Key Points

- **About UNFCCC:**
  - The **United Nations Framework Convention on Climate Change (UNFCCC)**, signed in **1992** at the **United Nations Conference on Environment and Development** also known as the **Earth Summit,** the **Rio Summit or the Rio Conference.**

    India is among the select few countries to have **hosted the COP of all three Rio conventions on climate change (UNFCCC), biodiversity (Convention on Biological Diversity)** and **land (United Nations Convention to Combat Desertification)**.
  - The UNFCCC entered into force on **21st March 1994,** and has been **ratified** by **197 countries.**
  - It is the **parent treaty of the 2015 Paris Agreement.** It is also the **parent treaty of the 1997 Kyoto Protocol.**
  - The **UNFCCC secretariat** (UN Climate Change) is the **United Nations entity** tasked with supporting the global response to the threat of climate change. It is **located in Bonn, Germany.**
- **Objective:**

  To achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous repercussions within a time frame so as to allow ecosystems to adapt naturally and enable sustainable development.
- **The Conference of the Parties (COP):**
  - COP is the **apex decision-making authority** of UNFCCC.
  - The COP **meets every year,** unless the Parties decide otherwise. The first COP meeting was held in Berlin, Germany in March, 1995.
  - The COP **meets in Bonn,** the seat of the secretariat, unless a Party offers to host the session.
  - The office of the COP President normally **rotates among the five United Nations regional groups** which are - Africa, Asia, Latin America and the Caribbean, Central and Eastern Europe and Western Europe and Others.
  - The President is usually the environment minister of his or her home country. S/he is elected by acclamation immediately after the opening of a COP session.

COP's with Significant Outcomes

- **1995: COP1 (Berlin, Germany)**

- **1997: COP 3 (Kyoto Protocol)**
  It legally binds developed countries to emission reduction targets.
- **2002: COP 8 (New Delhi, India) Delhi Declaration.**
  Focuses on the development needs of the poorest countries and the need for technology transfer for mitigating climate change.
- **2007: COP13 (Bali, Indonesia)**
  Parties agreed on the Bali Road Map and Bali action plan, which charted the way towards a post-2012 outcome. The Plan has five main categories: shared vision, mitigation, adaptation, technology and financing.
- **2010: COP 16 (Cancun)**
  - Resulted in the Cancun Agreements, a comprehensive package by governments to assist developing nations in dealing with climate change.
  - The Green Climate Fund, the Technology Mechanism and the Cancun Adaptation Framework were established.
- **2011: COP 17 (Durban)**
  Governments commit to a new universal climate change agreement by 2015 for the period beyond 2020 (Resulted in the Paris Agreement of 2015).
- **2015: COP21 (Paris)**
  - To keep global temperature well **below 2.0C** above pre-industrial times and endeavor them to limit them even **more to 1.5C.**
  - It requires rich nations to maintain **USD 100bn** a year funding pledge **beyond** the year **2020.**
- **2016: COP22 (Marrakech)**
  - To move forward on writing the rule book of the Paris Agreement.
  - Launched the Marrakech Partnership for Climate Action.
- **2017: COP23, Bonn (Germany)**
  - Countries continued to negotiate the finer details of how the agreement will work from 2020 onwards.
  - First set of negotiations since the US, under the presidency of Donald Trump, announced its intention earlier this year to withdraw from the Paris deal.
  - It was the first COP to be hosted by a small-island developing state with Fiji taking up the presidency, even though it was being held in Bonn.
- **2018: COP 24, Katowice (Poland)**
  - It finalized a “rulebook” to operationalise the 2015 Paris Agreement.
  - The rulebook covers climate financing facilities and the actions to be taken as per **Nationally Determined Contributions (NDC).**
- **2019: COP25, Madrid (Spain)**
  - It was held in **Madrid (Spain).**
  - **There were no concrete plans** regarding the growing climatic urgency.

Kharif Strategy for Oilseeds

Why in News

The **Ministry of Agriculture & Farmers Welfare** has formulated **Kharif Strategy 2021** to achieve **self-sufficiency in edible oils.**

Kharif Season

- Crops are sown from June to July and Harvesting is done in between September-October.
- Crops are: Rice, maize, jowar, bajra, tur, moong, urad, cotton, jute, groundnut, soyabean etc.
- States are: Assam, West Bengal, coastal regions of Odisha, Andhra Pradesh, Telangana, Tamil Nadu, Kerala and Maharashtra.

Key Points

- **About the Kharif Strategy 2021:**
  - An ambitious plan for the **free distribution of high yielding varieties of seeds** to the farmers for the Kharif season 2021 in the form of mini-kits.
  - Strategy for both area and productivity enhancement has been formulated for **soybean and groundnut** under the **National Food Security Mission (Oil Seeds and Oil Palm).**
  - It will bring an additional 6.37 lakh hectare area under oilseeds and is likely to produce 120.26 lakh quintals of oilseeds and edible oil amounting to 24.36 lakh quintals.

- **Basic Information Related to Oilseeds:**
    - Oilseed crops are the **second most important determinant of the agricultural economy,** next only to cereals within the segment of field crops.
        - The self-sufficiency in oilseeds attained through the **"Yellow Revolution"** during early 1990's, could not be sustained beyond a short period.
    - Oilseed crops are **primarily grown for the purpose of obtaining vegetable oils from them.** Oil content in them varies from 20% in soybeans to 40% in sunflowers and canola (rapeseed).
    - India is able to produce a huge amount of oilseeds because of the favourable environmental conditions.
        - Castor seed, sesamum, rapeseed, groundnut, mustard, soyabean, linseed, niger seed, sunflower and safflower are **some of the important oilseeds India is known to produce.**
    - Despite **being the fifth largest oilseed crop producing country** in the world, India is also **one of the largest importers of vegetable oils** today.
        - India buys more than two-thirds of its total edible oil imports as **palm oil**.
    - India has a marked position in the world in the production of a large amount of oilseeds.
        - After China, India is the **second largest producer of groundnut** and is **third in position in the production of Rapeseed** after China and Canada.
    - **Major Oilseeds Producing Areas in India are:** Rajasthan, Gujarat, Tamil Nadu, Madhya Pradesh, Haryana, Maharashtra, Karnataka, Andhra Pradesh.

- **National Food Security Mission (Oil Seeds and Oil Palm):**
  - **Objective:**

    To augment the availability of edible oils and reduce the import of edible oils by increasing the production and productivity of oilseeds and oil palm.
  - **Merger of NMOOP under NFSM:**
    - **National Mission on Oilseeds & Oil Palm (NMOOP)** was **launched in 2014-15** and continued upto 2017-18.
    - **From 2018-19** onwards, the NMOOP is **being implemented under NFSM** as NFSM-Oilseeds & Oil palm comprising the **sub components** NFSM-**Oilseeds,** NFSM-**Oil Palm** and NFSM-**Tree Borne Oilseeds (TBOs).**
  - **Multi-Pronged Strategy:**
    - Increasing **Seed Replacement Ratio (SRR)** with focus on varietal replacement.

      SRR is the percentage of area sown out of total area of crop planted in the season by using certified/quality seeds other than the farm saved seed.
    - **Productivity improvement** by adoption of proven and **climatic resilient technologies** like water saving devices (sprinklers/rain gun), zero tillage, **inter-cropping**, relay cropping, strategic application of micronutrient and soil ameliorants.
    - **Area expansion** through diversification of low yielding food grains.
    - **Capacity building.**
    - **Supporting cluster demonstrations** for the adoption of good agricultural practices.
    - **Creation of 36 oilseed hubs** with a focus on regional approach for larger availability of quality seeds.
    - **Post-harvest management** at farm and village level.
    - Formation of **Farmer Producer Organisations.**
  - **Funding Pattern:**
    - The cost sharing pattern between Central and State Governments, is in the **ratio of 60:40 for general category of States** and **90:10 for North Eastern and Himalayan States.**
    - For few interventions, like purchase of breeder seeds by both State and Central seed producing agencies, supply of seed mini-kits to the farmers, **100% funding is provided by Government of India.**

Source: PIB

Lithuania Quits China's 17+1

Why in News

Recently, **Lithuania** quit **China's 17+1** cooperation forum with **central and eastern Europe,** by calling it **"divisive",** now it is **16+1.**

> **Lithuania (Baltic Country)** urged other **EU (European Union)** members to pursue **"a much more effective 27+1 approach and communication with China."**

Key Points

- **About 17+1:**
  - **Formation:**
    The **17+1 (China and Central and Eastern Europe Countries) initiative** is a **China-led format** founded **in 2012** in **Budapest** with an aim to expand cooperation between Beijing and the **CEE (Central and Eastern Europe)** member countries, with investments and trade for the development of the CEE region.
  - **Member Countries:**
    The initiative includes **twelve EU** member states and **five Balkan states —** Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia and Slovenia.
  - **Aim and Objectives:**
    - The framework focuses on infrastructure projects such as bridges, motorways, railway lines and modernisation of ports in the member states.
    - The platform is largely seen as an extension of China's flagship **Belt and Road initiative (BRI).**
      India has consistently opposed BRI as a key part of it passes through Pakistan-occupied Kashmir (PoK).
- **Background of Declining Relations:**
  - **China's Narrative towards 17+1 Initiative:**
    - China's narrative towards the 17+1 initiative is about improving its relations with the European countries that are less developed as compared to the Western European states.
    - Trade relations between China and the CEE countries remained modest, leading to an increasing trade deficit since its inception.
  - **Growing Distance:**
    - Czech Republic President's decision to skip the ninth summit of the 17+1 initiative citing lack of actual investments, had showcased the differences between Beijing and Prague.
    - Some CEE countries refused to attend the BRI event in 2020.
  - **The Huawei Equation:**
    Some CEE countries signed a declaration with the US to ban **China's 5G network** expansion.

Baltic Countries

- Baltic states, the **northeastern region of Europe,** includes the countries of **Estonia, Latvia, and Lithuania,** on the eastern shores of the **Baltic Sea.**
- The Baltic states are bounded on the west and north by the **Baltic Sea,** which gives the region its name, on the east by Russia, on the southeast by Belarus, and on the southwest by Poland and an exclave of Russia.
- The Baltic region is **not rich in natural resources. Though Estonia** is an important producer of **oil shale,** a large share of mineral and energy **resources is imported.**

- **India and Baltic countries** have historical connection and common linguistic roots. The cutting edge technology and innovation ecosystems of the Baltic countries complement India's huge market and appetite for these technologies.

Balkan Countries

- The geographic term is used for ten sovereign states: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Kosovo, Macedonia, Montenegro, Romania, Serbia, and Slovenia.
- The region takes its name from the **Balkan Mountain, and Balkan Countries** are found in **Southern Europe.**
- It is a unique territory **inhabited by South Slavs** who form the majority of the population in Balkan Region.
- Region has a very diverse **ethno-linguistic scenario.** The Bulgarians, Macedonians, and Slovenes speak their own Slavic languages, while the Slavs of Serbia, Croatia, Bosnia and Herzegovina, and Montenegro all speak dialects of **Serbo-Croatian.**

Source: TH

Havana Syndrome

Why in News

Recently, two US officials have shown symptoms of a **mystery illness** that is linked to **Havana Syndrome.**

- In 2020, **a report** by the **National Academies of Sciences (NAS), US** found **directed microwave radiation** to be the **plausible cause** of the **Havana syndrome.**

- **Increasing** number of cases is being considered a **mass psychogenic illness.**

Mass Psychogenic Illness

> Mass psychogenic illness is when people in a group start feeling sick at the same time even though there is no physical or environmental reason for them to be sick. They could think they've been exposed to something dangerous, like a germ or a toxin (poison).

National Academy of Sciences

- It is a **non-profit, Government Organisation in the United States of America.**
- NAS was founded in 1863 as a result of an Act of Congress, which was approved by Abraham Lincoln.
- The organisation **offers its reports to the Government** with regard to the Science and Technology projects.

Key Points

- **About:**
  - **In late 2016,** a few diplomats from the **USA and their employees** had reported certain usual symptoms during their stay in **Havana, Cuba.**
  - They experienced some **odd physical sensations** and heard **peculiar sounds,** after which they **started feeling sick.**
  - The **US** had even **accused Cuba** of carrying out **sonic attacks.** But Cuba denied the accusations of the sonic attacks and refused awareness of any such illness or syndrome.
  - Ever since **many bodies and institutions** have been researching the cause of the **Havana syndrome** and many plausible factors have been discovered till date.
  - The symptoms of the syndrome include Nausea, Severe headaches, Fatigue, Dizziness, Sleep problems, Hearing loss.

    > A few of those who had been affected more faced **chronic issues like vestibular processing and cognitive problems.**

- **Microwave Weapons:**
  - **Direct Energy Weapon (DEW):**
    - They are a type of **direct energy weapons,** which aim **highly focused energy** in the form of **sonic, laser, or microwaves,** at a target.
    - They release **electromagnetic radiations** which cause sensations in the human body.
      Electromagnetic radiation heating the water in the human body makes a person feel dizziness and nausea.
  - **Countries with Microwave Weapons:**
    - A number of countries are thought to have developed these weapons to **target both humans** and **electronic systems.**
    - **China had first** put on display its microwave weapon, **called Poly WB-1,** at an air **show in 2014.**
    - The **US** has also developed a **prototype microwave-style weapon,** which it calls the **"Active Denial System",** which is the first non-lethal, directed-energy, counter-personnel system with an extended range greater than currently fielded non-lethal weapons.
  - **India's Plans for Directed Energy Weapons:**
    - Recently, the **Defence Research and Development Organisation (DRDO) has** announced its plans to develop **(DEWs)** using **high-energy lasers** and **microwaves.**
    - **Development of DEWs** is seen as particularly important in the context of India's worsening security environment, especially its ties with China.
  - **Concerns:**
    - These weapons are a cause of concern as they **can affect both machines and human beings.**
    - They **can cause long-term damages without leaving a single mark on the human body.**

Source: IE

Zebrafish and its Importance in Human Spaceflights

Why in News

A new research in **zebrafish** has demonstrated how **induced hibernation (torpor)** may protect humans from the elements of space, especially radiation, during space flight.

Key Points

About the Study:

- The researchers **exposed zebrafish to radiation** like what would be experienced on a six-month journey to Mars.
  They observed signs of oxidative stress **(imbalance between antioxidants and free radicals)**, DNA damage, stress hormone signaling and changes to the cell-division cycle.
- The researchers then **induced torpor in a second group of zebrafish** which were then exposed to the same dose of radiation.
  - The results showed that **torpor lowered the metabolic rate within the zebrafish and created a radioprotective effect**, protecting against the harmful effects of radiation.
  - Torpor, **a form of hibernation**, is a brief spell of suspended animation. It usually lasts less than a day. When in torpor, an animal's metabolism, heartbeat, breathing, and body temperature are greatly reduced.

Zebrafish

- **Scientific Name:** *Danio rerio*
- **Habitat:**
  - It is a small (2-3 cm long) freshwater fish found in the **tropical and subtropical regions.** The fish is native to **South Asia's Indo-Gangetic plains**, where they are mostly found in the paddy fields and even in stagnant water and streams.
  - They are classified as a **species of least concern** on the **IUCN's Red List of Threatened Species.**
- **Organism for Biomedical Research:**
  - They have been used to study vertebrate development, evolution, genetics, and disease due to its adequate **regeneration capacity of almost all its organs**, including the brain, heart, eye, spinal cord.
  - Zebrafish have a **similar genetic structure** (around 70%) to humans.
  - As a vertebrate, the zebrafish has the same major organs and tissues as humans. Their muscle, blood, kidney and eyes share many features with human systems.

- **Need of the Study:**
  Recent technological advancements might have made space travel more accessible. However, long-term space travel is incredibly **detrimental to human healt**h.

- **Significance:**
    - The study could help in understanding how a form of **hibernation, known as induced torpor (a state of reduced metabolic activity)** may provide radio-protective effects.
        - Hibernation is a physiological condition found in many species.
        - It **protects them against harsh conditions**, such as food scarcity and low environmental temperatures.
    - Replicating hibernation may therefore **protect astronauts** against the **harsh conditions of space flight**, which include challenges such as **radiation exposure, bone and muscle wastage, advanced ageing and vascular problems.**
    - The **European Space Agency (ESA)** is also conducting research into the impacts of **hibernating astronauts not just for health reasons**, but because it could **reduce the amount of consumables required for a space journey** and allow the **mass of a spacecraft to be reduced by a third.**

Challenges of Space Travel

- **Radiation:**
    - Any space flight is outside **Earth's protective magnetic field**, where radiation is much higher as compared to International space stations. (International space station is just within the earth's protective atmosphere; even then radiation is 10 times higher when compared to earth.)
    - **Radiation exposure** increases **cancer risk, damages the central nervous system, can alter cognitive function, reduce motor function and prompt behavioural changes.**
- **Isolation and Confinement:**
    - **Behavioural issues** among astronauts crammed in a small space over a long period of time, are inevitable.
    - Sleep loss, circadian desynchronization, and work overload compound this issue and may lead to performance decrements, adverse health outcomes.
- **Distance from Earth:**

  As distance of space flight increases from earth, communication delay increases. For example, there will be a communication delay of 20 minute in space travel to Mars.
- **Gravity:**
    - Different planets have **different gravitational pull**, for example astronauts would need to live and work in three-eighths of Earth's gravitational pull on Mars. Additionally, explorers will experience total weightlessness during the course of travel.
    - To further complicate the problem, when astronauts transition from one gravity field to another, it's usually quite an intense experience.
    - Blasting off from the surface of a planet or a descent through an atmosphere is many times the force of gravity.

- **Hostile/Closed Environments:**

  NASA has learned that the **ecosystem inside the spacecraft** plays a big role in everyday astronaut life. Microbes can change characteristics in space, and microorganisms that naturally live on your body are transferred more easily from person to person in closed habitats like the space station.

Source: DTE

Competition Commission Of India

Why in News

Recently the **12th Annual Day** of the **Competition Commission of India (CCI)** was observed on **20th May.**

Key Points

- **About:**
  - **Statutory Body:**
    - Competition Commission of India is **a statutory body** responsible for enforcing the objectives of the **Competition Act, 2002.**
    - **CCI** was established by the **Central Government** with effect from **14th October 2003**, but it became fully functional on **20th May, 2009.**
  - **Composition:**

    A Chairperson and **6 Members** appointed by the **Central Government.**
- **Formation of CCI:**

  The CCI was established under the provisions of the **Competition act 2002:**

  The Competition Act, 2007, was enacted after amending **Competition Act, 2002**, that led to the establishment of the **CCI and the Competition Appellate Tribunal.**

  The government replaced the **Competition Appellate Tribunal (COMPAT)** with the **National Company Law Appellate Tribunal (NCLAT) in 2017.**

- **Functions and Role of CCI:**
  - **To eliminate practices** having adverse effects on competition, promote and sustain competition, protect the interests of consumers and ensure freedom of trade in the markets of India.
  - The Competition Commission of India takes the **following measures** to achieve its objectives:
    - **Consumer welfare** to make the markets work for the benefit and welfare of consumers.
    - **Ensure fair and healthy competition** in economic activities in the country for faster and inclusive growth and development of the economy.
    - **Implement competition policies** with an aim to effectuate the most efficient utilization of economic resources.
    - **Develop and nurture effective relations** and interactions with sectoral regulators to ensure smooth alignment of sectoral regulatory laws in tandem with the competition law.
    - **Effectively carry out competition advocacy** and spread the information on benefits of competition among all stakeholders to establish and nurture competition culture in Indian economy.
- **Need of CCI:**
  - **Promote free enterprise:** Competition is important for the preservation of economic freedom and our free enterprise system.
  - **Protect against market distortions:** The need for competition law arises because markets can suffer from failures and distortions, and various players can resort to anti- competitive activities such as cartels, abuse of dominance etc. which adversely impact economic efficiency and consumer welfare.
  - **Promotes domestic industries:** During the era in which the economies are moving from closed economies to open economies, an effective competition commission is essential to ensure the continued viability of domestic industries, carefully balanced with attaining the benefits of foreign investment increased competition.

Source: PIB
