MADE EASY

WEEKLY CURRENT AFFAIRS

DECEMBER, 2023

Week-2

8-14 Dec., 2023

★★ *Useful for* ★★

CSE, ESE, PSUs, State Services Exams, SSC and Banking Exams

8th DECEMBER, 2023

GEMINI: AI Model

- **Context:** Google has launched Project Gemini, its largest and most capable AI model.

Key Highlights:

- It is a Multimodal AI and a Large Language Model (LLM) developed by Google.
- It could revolutionize how we search for information online.
- It could be used to create new forms of art and entertainment, pushing the boundaries of human creativity
- It can understand different types of information including text, audio, images and video.
- It surpasses most human experts in various tasks, potentially making it the most powerful AI model to date.
- It will be available in three models: Ultra (for highly complex tasks), Pro (for scaling across a wide range of tasks) and Nano (on-device tasks).
- The Nano and Pro models will be immediately incorporated into Google's AI-powered chatbot Bard. The Ultra model will be launched next year.

J&K Reservation (Amendment) Bill, 2023 and the J&K Reorganisation (Amendment) Bill, 2023

- **Context:** Lok Sabha has passed Jammu & Kashmir Reservation (Amendment) Bill, 2023 and the Jammu and Kashmir Reorganisation (Amendment) Bill, 2023.

Key Highlights:

- Jammu & Kashmir Reservation (Amendment) Bill,2023 aim is to amend the Jammu and Kashmir Reservation Act, 2004.
- The J&K Reservation Act, 2004 provided reservation in jobs and admission in professional institutions to Scheduled Castes (SCs), Scheduled Tribes (STs) and other socially and educationally backward classes.

- The Bill seeks to replace the term "weak and underprivileged classes (social castes)'' in the J&K Reservation Act, 2004 to "other backward classes" as declared by the Union Territory.
- Jammu and Kashmir Reorganisation (Amendment) Bill,2023 aim is to amend the Jammu and Kashmir Reorganisation Act, 2019.
- The J&K Reorganisation Act, 2019 provides for the reorganization of the state of Jammu and Kashmir into the union territories of Jammu and Kashmir (with legislature) and Ladakh (without legislature).
- It Increases the total number of seats in the J&K Assembly from 107 to 114. This is based on the report of the Delimitation Commission.
- It Seeks to provide reservation of 9 seats for Scheduled Tribes for the first time.

Garba of Gujarat makes it to UNESCO

- **Context:** Garba has been included in the UNESCO list of Intangible Cultural Heritage. It is the 15th cultural item from India to make it to the UNESCO list of Intangible Cultural Heritage.

Key Highlights:

- Garba is a ritualistic and devotional dance performed in Gujarat and across India.
- It is performed on the occasion of the festival of Navratri which is dedicated to the worship of the feminine energy or 'Shakti'.
- The word Garba means womb, with the dance signifying life.
- The dance is traditionally performed around a centrally lit clay lantern called the Gabra, which represents the goddess of power who remains constant throughout time.
- The dancers form a ring around the central lamp and revolve in circles. It represents the cycle of time from birth to death and rebirth
- The garba dancers wear colourful traditional costumes. Women dress up in Chaniya choli and men wear kafni pyjamas and Ghagra.

- The dance is inclusive, attracting people of all ages and backgrounds and emphasizes community participation.

9th DECEMBER, 2023

GNoME: Google DeepMind's

- **Context:** Researchers at Google DeepMind have developed a new Deep Learning Artificial Intelligence (AI) tool called GNoME to discover new materials.

Key Highlights:

- GNoME stands for Graph Networks for Materials Exploration. It is a Deep Learning AI tool developed by researchers at Google Deep Mind.
- Its purpose is to discover new materials and predict material stability.
- GNoME is said to have discovered over 2.2 million new materials including 380,000 materials that it predicts to be stable.
- This breakthrough that could have wide-reaching application in sectors such as renewable energy, battery research, semiconductor design and computing efficiency.
- GNoME is a graph neural network model (GNN) where the input data for the model takes the form of a graph that can then be likened to connections between atoms.
- It was trained using active learning (a type of machine learning technique used to scale up a model first trained on a small specialised dataset)
- GNoME has significantly improved the accuracy of predicting material stability from 50% to approximately 80%.
- It has increased the number of known stable materials. This could lead to the development of new technologies such as more efficient batteries and superconductors.
- It uses filters to narrow down the list of potential materials. This saves time and money by avoiding the need to synthesize and test materials that are unlikely to be stable.

JT-60SA: The World's biggest nuclear fusion reactor

JT-60SA, the world's largest and most advanced nuclear fusion reactor started its official operations in Japan, marking a major milestone towards achieving the goal of clean energy.

Key Highlights:

- JT-60SA is a joint initiative between the European Union and Japan aiming to investigate the feasibility of nuclear fusion as a sustainable and near limitless power source.
- The JT-60SA reactor is a six-storey-high machine, which is kept in a hangar in Naka, north of Tokyo. It comprises a doughnut-shaped "tokamak" vessel set to contain the swirling plasma heated up to 200 million degrees Celsius.
- One of the main objectives of this project is to replicate nuclear fusion ignition (net surplus energy), a feat first achieved by scientists at the Lawrence Livermore National Laboratory in California.
- The net energy gain was achieved by using lasers to fuse together two light atoms into a single denser one, releasing high amounts of energy. This net energy gain allows the nuclear fusion reaction to become self-sustaining.
- A similar even bigger nuclear fusion reactor is currently under construction in France, and is expected to begin operations in 2025.

Pompe Disease

- **Context:** About 50 individuals in India who currently suffer from Pompe disease.

Key Highlights:

- Pompe disease is a rare genetic disorder caused by mutations in a gene that makes an enzyme called Acid alpha-glucosidase (GAA).
- GAA is used by the body to break down glycogen, a stored form of sugar used for energy. The glycogen is converted into glucose in Lysosomes.

- In Pompe disease, mutations in the GAA gene reduce or completely eliminate this essential enzyme, resulting in the accumulation of glycogen in cells, particularly in muscles.
- No Cure but there are treatments to manage symptoms. Enzyme replacement therapy can help improve muscle tone and reduce glycogen storage in individuals with Pompe disease.

10th DECEMBER, 2023

India-Korea Electronic Origin Data Exchange System (EODES)

- **Context:** India-Korea Electronic Origin Data Exchange System (EODES) for faster clearance of imported goods launched.

Key Highlights:

- It is aimed at facilitating the smooth implementation of the India-Korea Comprehensive Economic Partnership Agreement (CEPA) by way of electronic exchange of origin information between the two customs administrations in respect of the goods traded under the CEPA.
- The data fields in a Certificate of Origin (CoO) shall be electronically shared by the exporting customs administration with the importing customs, as soon as the certificate is issued. This would facilitate faster clearance of imported goods.
- The success of the EODES project shall serve as a global template in the field of international Customs cooperation.

CRISPR Gene Therapy for Sickle Cell Disease

- **Context:** The US Food and Drug Administration (FDA) approved two gene therapies for sickle cell disease, making one of them the first treatment based on the Nobel Prize-winning CRISPR gene editing technology.

Key Highlights:

- The US FDA approved the Casgevy (developed by Vertex Pharmaceuticals and CRISPR Therapeutics), and Lyfgenia (developed by Bluebird bio) for people aged 12 years and older.
- Casgevy and Lyfgenia are pitched as one-time treatments, and these will be available in early 2024.
- Casgevy is based on CRISPR that uses molecular 'scissors' to trim faulty parts of genes that can then be disabled or replaced with new strands of normal DNA.
- On the other hand, Bluebird's gene therapy (Lyfgenia) is designed to work by inserting modified genes (cell-based gene therapy) into the body through disabled viruses.
- Lyfgenia uses a lentiviral vector (gene delivery vehicle) for genetic modification.
- The therapies represent a breakthrough in the treatment of sickle cell disease. Offers hope for improved management and potential transformative impact.

11th DECEMBER, 2023

Global Cooling Watch 2023

- **Context:** Recently, the Global Cooling Watch 2023 Report titled "Keeping it Chill: How to meet cooling demands while cutting emissions" was released.

Key Highlights:

- The report was released by UN Environment Programme (UNEP)-led Cool Coalition.
- It has been released in support of the Global Cooling Pledge.
- It is a comprehensive analysis of the global cooling sector and focuses not only on space cooling but also on cold chains for food and health.
- Currently, cooling equipment currently accounts for 20% of total electricity consumption and is expected to more than double by 2050.

- Under a business-as-usual scenario, emissions from cooling are predicted to account for more than 10 per cent of global emissions in 2050.

- The report focuses on three key measures for sustainable cooling–Passive cooling, Higher-energy efficiency standards and Faster phase down of climate-warming hydrofluorocarbon (HFC) refrigerants through the Kigali Amendment to the Montreal Protocol.

- These measures could lead to 60 per cent cut off predicted 2050 sectoral emissions.

- Global Cooling Pledge was signed at COP28, the pledge aims to address the growing demand for cooling while mitigating its climate impacts. 63 countries have signed the pledge. However, India has not signed it yet.

DRESS Syndrome

- **Context:** The Indian Pharmacopoeia Commission (IPC) has warned about risks linked to the painkiller Meftal. They have cautioned about possible harmful reactions with the drug such as a severe condition called DRESS syndrome.

Key Highlights:

- DRESS syndrome stands for Drug Rash with Eosinophilia and Systemic Symptoms.

- It is a severe, idiosyncratic reaction to drugs such as such as abacavir, allopurinol, and lamotrigine. Idiosyncratic drug reaction is used for unpredictable reactions that occur in only a small percentage of patients receiving the drug

- It is characterised by a delayed onset of symptoms including fever, skin rash, lymphadenopathy (swelling of lymph nodes), eosinophilia (an increase in a type of white blood cells) and various systemic manifestations.

- The syndrome has an estimated mortality rate of 10 per cent.

About Meftal:

- Meftal is an over-the-counter medication used to treat pain and inflammation.

- It contains the active ingredient mefenamic acid, which belongs to a class of drugs known as nonsteroidal anti-inflammatory drugs (NSAIDs).

- It is often prescribed for conditions like rheumatoid arthritis, menstrual pain, dental pain, inflammation, fever, etc.

- Other commonly used NSAIDs include ibuprofen, naproxen, and aspirin

Urban flood mitigation project

- **Context:** PM Shri Narendra Modi has approved the India's first urban flood mitigation project.

Key Highlights:

- It is India's first project to tackle urban floods after Chennai heavy floods.

- This project will be implemented through the financial assistance of Asian Development Bank.

- It boosts Chennai's resilience to natural disasters through effective flood management strategies.

- This project proactively tackles urban flooding challenges

12th DECEMBER, 2023

Indian Forest & Wood Certification Scheme

- **Context:** The Ministry of Environment has launched the Indian Forest & Wood Certification Scheme.

Key Highlights:

- This national certification scheme promotes sustainable forest management and agroforestry in India through voluntary third-party certification.

- It is supervised by Indian Forest and Wood Certification Council (Act as a multistakeholder advisory body) and Implementing agency is Indian

Institute of Forest Management, Bhopal (Responsible for overall management of the Indian Forest and Wood Certification Scheme.)

- This scheme offers market incentives to various entities such as state forest departments, individual farmers, FPOs, and wood-based industries, that practice responsible forest management and agroforestry.

- The scheme comprises forest management certification, tree outside forest management certification, and chain of custody certification.

- A distinct Trees Outside Forests Standard is introduced in the newly launched Indian Forest & Wood Certification Scheme.

AMRIT Technology

- **Context:** Minister of State for Jal Shakti has informed Rajya Sabha about AMRIT Technology.

Key Highlights:

- AMRIT stands for Arsenic and Metal Removal by Indian Technology. It is a water purifier developed for the removal of Arsenic and Metal ions from water.

- It is developed by Indian Institute of Technology(IIT) Madras

- The technology uses nano-scale iron oxy-hydroxide which selectively removes arsenic when water is passed through it.

- It can be used for both domestic and community levels.

VINBAX-2023

- **Context:** The Indian Armed Forces contingent arrived in Hanoi, Vietnam for the fourth edition of Joint Military Exercise VINBAX-2023.

Key Highlights:

- It's an annual training event held alternately in India and Vietnam.

- To enhance collaboration, promote interoperability, and share best practices under Chapter VII of the United Nations Charter on Peacekeeping Operations.

- The joint exercise promotes idea exchange and collaborative rehearsal of tactics, techniques, and procedures.

- They will perform technical military operations aligned with scenarios resembling global deployment of United Nations' contingents.

- This joint effort enhances understanding, interoperability, and strengthens defense cooperation between the friendly armies.

13th DECEMBER, 2023

Central Bank Digital Currency (CBDC)

- **Context:** According to the Reserve Bank of India (RBI), Central bank digital currency (CBDC) could become a tool for reducing time and cost for cross-border transactions.

Key Highlights:

- CBDCs are a form of digital currency issued by a country's central bank.

- They are similar to cryptocurrencies, except that their value is fixed by the central bank and equivalent to the country's fiat currency.

- In India the introduction of CBDC was announced in the Union Budget 2022-23.

- People without access to traditional banking can use CBDCs for transactions, payments, and other financial services.

- CBDCs can streamline and expedite payment processes, reducing transaction costs and settlement times.

- CBDC can be used as a tool for responding to financial crises or emergencies by providing a means for the central bank to inject liquidity into the economy more quickly.

- CBDC could facilitate faster and more efficient cross-border payments, reducing the reliance on correspondent banks and intermediaries.

- Central banks can implement real-time monitoring of CBDC transactions which allows for immediate detection of any unusual or suspicious activities, helping to prevent counterfeiting.

Atal Pension Yojana (APY)

- **Context:** The total enrolment under the Atal Pension Yojana (APY) has crossed 6 crore, with over 79 lakh enrolments in the current Financial Year, 2023-24.

Key Highlights:

- APY is a flagship social security scheme of the Government of India, launched on 9th May 2015.
- It is managed by The Pension Fund Regulatory and Development Authority (PFRDA).
- To provide old age income security to Indian citizens, with a particular focus on the poor, underprivileged, and workers in the unorganized sectors.
- The minimum age of joining APY is 18 years and maximum is 40 years. The age of exit and start of pension is 60 years.
- Exclusions: From 1st October, 2022, any citizen who is or has been an income tax payer, shall not be eligible to join APY.
- Each subscriber under APY shall receive a guaranteed minimum pension between Rs. 1000 to Rs. 5000 per month, after the age of 60 years until death.
- After the subscriber's demise, the spouse of the subscriber shall be entitled to receive the same pension amount as that of the subscriber, until death.
- After the demise of both the subscriber and the spouse, the nominee of the subscriber shall be entitled to receive the pension wealth, as accumulated till the subscriber's age of 60 years.
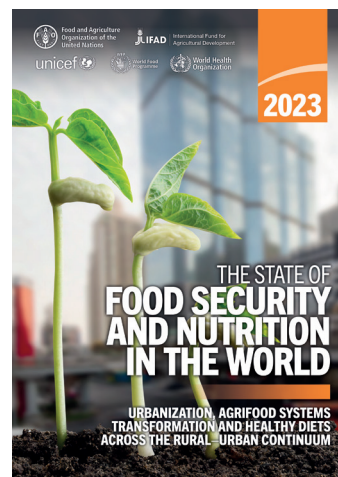
14th DECEMBER, 2023

Anarcho-Capitalism

- **Context:** The term "Anarcho-Capitalism" has surged in prominence as Javier Milei, a self-professed anarcho-capitalist, secured victory in recent Argentina's presidential elections.

Key Highlights:

- Anarcho-Capitalism is a political philosophy advocating for the elimination of the State and the delegation of law and order to private entities within a free-market system.
- It is coined by American libertarian economist Murray Rothbard, the ideology attributes its roots to Belgian political economist Gustave de Molinari, considered to be the first anarcho-capitalist.
- David Friedman, Edward Stringham, and Michael Huemer stand among the contemporary proponents of anarcho-capitalism.
- In an anarcho-capitalist society, private organizations would be responsible for providing and regulating all services, including security, law enforcement, and dispute resolution. In other words, people would be paying private police and courts to offer them protection against crime and to adjudicate disputes with others.

Food Security and Nutrition Report 2023

- **Context:** The Food and Agriculture Organization (FAO) has released a report titled "Asia Pacific Regional Overview of Food Security and Nutrition 2023: Statistics and Trends".

Key Highlights:

- It is released by Food and Agriculture Organization (FAO). To inform stakeholders on progress towards ending hunger, achieving food security and improving nutrition.
- The report is a glimpse of the progress in meeting Sustainable Development Goals and World Health Assembly (WHA) Global Nutrition Targets 2025.

- During the pandemic and the "5Fs" crisis (food, feed, fuel, fertiliser, and finance), the Asia Pacific region experienced troubling statistics.
- About half of the world's undernourished people live in the Asia-Pacific region, with more women than men being food insecure.
- Southern Asia has highest prevalence of undernourishment at 15.6 percent.

Statistics and Trends of India:

- **Affordability of Healthy Diet:** In 2021, over 74% of Indians (76.2% in 2020) could not afford a healthy diet.
- **Undernourishment:** 16.6% of India's population is undernourished, facing economic and social costs.
- **Prevalence of Child Malnutrition:**
    - **Stunting (low height for age):** 31.7% of children under the age of five.
    - **Wasting (low weight for height):** 18.7% (the highest rate in the region) and Overweight: 2.8%.
- **Low Birth Weight:** 27.4% (highest regional prevalence in the region).
- **Anaemia:** 53% of women aged 15-49 had anaemia in 2019 (largest prevalence in the region).
- **Exclusive Breastfeeding:** India has a higher prevalence (63.7%) of exclusive breastfeeding in infants (0-5 months) compared to the world average (47.7%).