

### WHAT IS GENERATIVE AI?

A new report predicts that Generative AI (genAI) is poised to become a \$100 billion industry by 2026.



#### About Generative AI:

- Generative AI, or generative artificial intelligence, is a form of artificial intelligence (AI) in which **algorithms automatically produce content in the form of text, images, audio, and video.**
- Unlike traditional AI systems that are designed to recognize patterns and make predictions, generative AI **creates new content.**
- Generative AI is **powered by foundation models (large AI models) that can multi-task** and perform out-of-the-box tasks, including summarization, Q&A, classification, and more.
- These systems have been **trained on massive amounts of data.**
- It works by using a **Machine Learning (ML) model to learn the patterns and relationships in a dataset** of human-created content. It then **uses the learned patterns to generate new content.**
- Typically, it **starts with a simple text input, called a prompt**, in which the user describes the output they want. Then, **various algorithms generate new content according to what the prompt is asking for.**
- **Popular Generative AI Tools:**
  - **ChatGPT:** ChatGPT is an **AI-powered chatbot developed by OpenAI**, with a unique ability to not only generate written content but also converse with users fluently.
  - **Bard:** Bard is a generative AI **chatbot created by Google**, based on LaMDA language model technology. It can answer questions asked by users or create new content from text or image prompts.

## What is Machine Learning (ML)?

- It is defined as a **discipline of artificial intelligence (AI)** that **provides machines with the ability to automatically learn from data and past experiences to identify patterns and make predictions** with minimal human intervention.
  - Machine learning methods **enable computers to operate autonomously** without explicit programming.
  - **ML applications are fed with new data** and they can **independently learn, grow, develop, and adapt.**
  - ML algorithms **use computation methods to learn directly from data** instead of relying on any predetermined equation that may serve as a model.
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## EXERCISE -SADA TANSEEQ



**In a major boost of ties, the militaries of India and Saudi Arabia are conducting their first Joint Military Exercise named as Sada Tanseeq.**

**Exercise Sada Tanseeq** is the inaugural edition of **India-Saudi Arabia Joint Military Exercise 'SADA TANSEEQ'** commenced at Mahajan, Rajasthan.

- The Exercise is scheduled to be conducted from 29th January to 10th February 2024.
  - Aim of the Exercise is to train troops of both sides for Joint Operations in Semi Desert terrain under **Chapter VII of the United Nations Charter.**
  - The Exercise will enable both the sides to share their best practices in the tactics, techniques and procedures of conducting operations in sub-conventional domains.
  - It will facilitate developing interoperability, bonhomie and camaraderie between troops from both the sides.
  - The Exercise will involve Establishment of Mobile Vehicle Check Post, Cordon & Search Operation, House Intervention Drill, Reflex Shooting, Slithering and Sniper Firing.
  - The Exercise will provide an opportunity to both the contingents to strengthen their bond.
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## UGC'S DRAFT GUIDELINES SPARK OUTRAGE OVER 'DERESERVATION' IN FACULTY RECRUITMENT

### News Summary:

- In December, 2023, the higher education regulator had shared draft guidelines on implementing the reservation policy in higher education institutions for public feedback by the end of January, 2024.
- This draft is prepared by a four-member committee headed by the director of the Institute of Public Administration, **Dr H S Rana**.
- Among the key recommendations of the committee, it proposed de-reservation of unfilled quota posts meant for teachers, officers, and employees of a university.
- The committee suggested that there is a “general ban on de-reservation of reserved vacancies in case of direct recruitment”, **in exceptional circumstances it can be done if the university can provide adequate justification for it.**
- The draft guidelines specify that proposals for de-reservation concerning job positions designated for Group A and Group B posts should be submitted to the Education Ministry.
  - Similarly, proposals for Group C and D posts should be forwarded to the Executive Council (the top decision-making body) of the university for special permission.
- These proposals would have to provide information such as the designation, pay scale, name of the service, responsibilities, required qualifications, efforts made to fill the post, and why it cannot be allowed to remain vacant.
- This led to criticism by sections of the academia.
- The UGC chairman then clarified that is it just a draft and anything related to de-reservation will be taken out of it while making the final document.

### What is the Current Position?

- In the current scenario, **reserved faculty positions are not converted to recruit general candidates.**
  - While the Department of Personnel and Training (DoPT) permits de-reservation in exceptional circumstances exclusively for Group A posts, this provision has not been put into effect in universities.
  - Unfilled quota positions undergo re-advertisement, and universities organise special recruitment drives until suitable candidates are identified, without opening these positions to the general category.
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## WHAT ARE E-INK DISPLAYS?



With their crisp, paper-like screens, E-Ink displays like the Kindle are a pleasure to read on.

### About E-Ink displays:

- These are a special **type of screen technology** often used in e-readers like the Amazon Kindle.
- The technology was originally developed in the 1990s at MIT and is now owned by E Ink Corporation.
- **Working:**
  - The screens work using **tiny microcapsules** filled with **positively charged white particles** and **negatively charged black** ones suspended in fluid inside the display.
  - By applying positive or negative electrical charges to different areas of the screen, the white or black particles can be made to rise to the surface, creating the text and images on the display.
  - Unlike **LCD and LED displays that use a backlight**, E Ink displays reflect light – just like paper. This makes them easier on the eyes for long reading sessions.
  - They also require **very little power** since they don't need a backlight and only use energy when the image changes.

- The lack of backlighting also means that they are **easier to read under brighter lighting conditions**, which isn't the case with LCD/LED displays at all – legibility actually takes a hit under bright sunlight.
  - **Advantages:**
    - They **consume very little power** compared to LCD and OLED displays. An E Ink display only draws power when the image is changed, meaning it can display a static image for weeks or months without needing a charge.
    - They cause **less eye strain** for the user.
  - **Disadvantages:**
    - It has a slow **refresh rate** compared to LCD and OLED displays, making them unsuitable for video or animation.
    - It has **limitations on colour and resolution** compared to other display technologies.
    - The niche nature of E-Ink manufacturing means the **displays remain expensive**, especially in larger sizes.
  - **Other applications:** It is used in **bus stop displays** and **walking direction signs** and restaurants menu boards etc.
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## RATLE HYDRO ELECTRIC PROJECT

The government recently announced diversion of Chenab river water through diversion tunnels to expedite the 850-MW Ratle Hydro Electric Project in Jammu & Kashmir.



### About Ratle Hydro Electric Project:

- It is an 850 MW run-of-river hydroelectric power project being built on the Chenab River in the Kishtwar District of Jammu and Kashmir.
- The project is being developed by Ratle Hydroelectric Power Corporation (RHPCL), which was formed as a joint venture (JV) between Jammu & Kashmir State Power

Development Corporation (JKSPDC) and India's state-owned National Hydroelectric Power Corporation (NHPC).

- The project comprises a 133-metre-tall and **194.8-meter-long concrete gravity dam**, a diversion dam, and an underground powerhouse on the right bank of the river.

## Key Facts about Chenab River:

- It is a **major river of India and Pakistan**.
- **Origin:** It is formed by the **confluence of two streams, Chandra and Bhaga**, at Tandi in the **upper Himalayas** in the Lahaul and Spiti Districts of **Himachal Pradesh**.
- In its upper reaches, it is also **known as the Chandrabhaga**.
- It is a **tributary of the Indus River**.
- **Course:**
  - It **flows west through Jammu and Kashmir** union territory, **between** the steep cliffs of the **Siwalik Range** (south) **and the Lesser Himalayas** (north).
  - **Turning southwest, it continues into Pakistan**, descending from the uplands into the broad alluvial lowlands of Punjab province.
  - After **receiving the Jhelum River** near Trimmu, the Chenab **empties into the Sutlej River**, a tributary of the Indus River.
- Its total length is about 605 miles (974 km), and it feeds several irrigation canals.
- **Tributaries:** The tributaries of the Chenab River include **Miyar Nalla, Sohal, Thiroat, Bhut Nalla, Marusudar, and Lidrari**.

## SLOTH BEAR

Karnataka has witnessed instances of human-sloth bear confrontations, raising concerns for both communities and wildlife enthusiasts.



### About Sloth bear:

- **Scientific Name:** Melursus ursinus
- Sloth bears are one of the **eight bear species** found across the world.



- They are **myrmecophagous**, meaning, they find bugs and termites to be their most sought-after meal.
- **Habitat:** They live in a variety of **dry and moist forests** and in some tall grasslands, where boulders, scattered shrubs and trees provide shelter.
- **Appearance:** They have long, shaggy dark brown or black fur and curved claws, which are the longest out of any of the bear species.
- **Conservation Status**
  - **IUCN:** Vulnerable
  - **Wildlife Protection Act, 1972:** Schedule 1
- **Key to mitigate human-sloth bear confrontations:** Enhancing habitat connectivity, minimising human-wildlife interaction zones, and implementing responsible waste management practices.
- **Sloth Bear Sanctuaries in India:** Daroji Sloth Bear Sanctuary (Karnataka), Jessore Sloth Bear Sanctuary (Gujarat).

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## OVERHAUL OF CYBERSECURITY FRAMEWORK

### Why in news?

- As per the media reports, the government has drawn up a guiding policy called the **National Cybersecurity Reference Framework (NCRF)** to help manage cybersecurity better.
- The framework is based on existing legislations, policies and guidelines. It outlines implementable measure with clear articulation of roles and responsibilities for cybersecurity.

### National Cybersecurity Reference Framework (NCRF)

- **About**
  - NCRF is a framework that sets the standard for cybersecurity in India.

- The NCRF can serve as a template for **critical sector** entities to develop their own governance and management systems for strong cyber-security systems.
  - The government has identified telecom, power, transportation, finance, strategic entities, government entities and health as critical sectors.
- **Institutions involved in framing the framework**
  - The framework has been drawn up by the National Critical Information Infrastructure Protection Centre (NCIIPC) with support from the National Cybersecurity Coordinator (NCSC).

## Need for National Cybersecurity Reference Framework (NCRF)

- **Growing cyberattacks and lack of an overarching framework on cybersecurity**
  - India faces a barrage of cybersecurity-related incidents which pose a major challenge to New Delhi's national security imperatives.
    - E.g., A high-profile attack on the systems of AIIMS Delhi in 2022.
  - Many ministries feel hamstrung by the lack of an overarching framework on cybersecurity when they are formulating sector-specific legislations.
- **Emergence of threat actors backed by nation-states and organised cyber-criminal groups**
  - In recent years many **threat actors backed by nation-states and organised cyber-criminal groups** have attempted to target Critical Information Infrastructure (CII) of the government and enterprises.
  - In addition, availability of cyber-attacks-as-service has reduced the entry threshold for new cyber criminals, thus increasing the exposure to individuals and organisations.
- **National Cybersecurity Policy of 2013 is still guiding the cybersecurity of the nation**
  - The current guiding framework on cybersecurity for critical infrastructure in India comes from the National Cybersecurity Policy of 2013.
  - From 2013 till 2023, the world has changed as new threats and new cyber organisations have emerged calling for new strategies.



## DALMA WILDLIFE SANCTUARY

The canopy walk facility at a height of 25 feet at the Dalma Sanctuary will be set up soon.



### About Dalma Wildlife Sanctuary:

- **Location:**
  - It is located 10 kilometres from the city of Jamshedpur in the state of **Jharkhand**.
  - It is situated around the **Dalma Hills** on the **Chota Nagpur Plateau**.
- The Sanctuary gets its **name from the "Dalma mai"** a local goddess who is revered and worshipped by the local people and the people of adjoining villages of Dalma.
- Inaugurated in 1975, it contains a **significant population of Indian Elephants**.
- The sanctuary covers almost 193 sq. km. of forest area.
- The entire forest of Dalma Sanctuary falls in the **catchment of the Subarnarekha River and Dimna Lake** of Jamshedpur.
- **Vegetation:** The forests of Dalma come under the category "**Dry peninsular Sal**" and "**Northern dry mixed deciduous Forest**".
- **Flora:** **Medicinal plants like Ananatmula, Satawari, Sarpagandha, etc.** are abundant in the sanctuary. Various types of trees, climbers, herbs, shrubs, and orchids are found here.
- **Fauna:**
  - Besides elephants, the sanctuary has a considerable population of other wildlife like **barking deer, wild boar, giant squirrel, porcupine, pangolin, sloth bear, etc.**
  - Commonly seen birds in the sanctuary are **falcons, golden orioles, Indian tree pie, paradise fly catchers, grey hornbills, Indian peafowl, etc.**