

CSB IAS ACADEMY

THE ROAD MAP TO MUSSOORIE...

PRELIMS EDGE – 2025 – 05/11/2024

Terms in News

MIG-29



- India's premier Air Defense Fighter aircraft
- Light-weight **air-superiority** fighter aircraft developed by the Mikoyan design bureau of Russia as an air superiority fighter during the 1970s.
- **Twin-engine jet** fighter inducted into Indian Air Force in 1985.
- With about **110** Mig-29s operated by Indian Air Force and Indian Navy combined, India is the second biggest operator of Mig-29s in the world after Russia.
- The MiG-29 aircraft played an important role during the **Kargil War** of 1999.
- Three squadrons of 16-18 MiG-29s aircrafts each are deployed in the strategically important Adampur Air Force Station, which is around 100 km from Pakistan and 250 km away from China borders.
- The MiG 29s are far more superior to F-16s of the Pakistan Airforce with the

capacity to launch Beyond Visual Range BVR missiles.

Transponder

- A transponder is a **wireless communication, monitoring, or control device** that picks up and



- automatically responds to an incoming signal.
- The term is a **combination of transmitter and responder**.
- Transponders are typically used for detecting, identifying, and locating objects, but they can also be used in other technologies, such as satellites to relay communications signals.
- Transponders are commonly found in both civilian and military aircraft and in objects, such as car keys.

How do transponders work?

- Transponders operate using **radio frequencies** and respond to wireless monitoring, communications, and control device signals.
- When sent a signal-also called an interrogator-a transponder responds by returning an identifying signal.

- The information included in the response varies depending on the type of transponder but can include location and identifying codes.
- The transponder automatically sends back a radio signal at a predetermined frequency.
- To receive and send signals simultaneously, receiving and transmitting signals must be set at different frequencies.

Transponders are used with the following technologies:

- Aircraft identification;
- communications satellites;
- Vehicle keys;
- Optical communications;
- Sonar;
- Electronic toll collection systems;
- Lap timing and tire identification for Motor sports; and
- Magnetic labels on credit cards.

Hydrogel

- A new way discovered by a team of researchers at the Department of Chemical Sciences in Bose Institute to create hydrogels using tiny protein fragments of just five amino acids from the SARS-CoV-1 virus, could help improve targeted drug delivery & reduce side effects.
- Hydrogels are **three-dimensional network composed of hydrophobic polymers synthesized by crosslinking water-soluble polymers.**
- Hydrogels can **retain a large quantity of water** within their network without disturbing their original structure. This imparts flexibility and swelling properties to the hydrogel structures.
- It is a **“smart” material** that can change its structure in response to its

environment, such as the local temperature, pH, salt or water concentration.



Yanadi Tribe

- Yanadis are one of the major scheduled tribes of **Andhra Pradesh.**
- They are among the most vulnerable tribal groups in India.
- They live in extreme conditions of poverty and social exclusion.
- A significant population of Yanadis live in the plains of Nellore, a district in the eastern coastal state of **Andhra Pradesh.**
- Their population according to 2001 census reports is 4,62,167 in Andhra Pradesh.
- Their mother tongue is **Telugu.**
- Historically, the Yanadis have been associated with occupations such as **hunting, gathering, and agriculture**, relying on their intimate knowledge of the land and its resources for sustenance.
- They have rich traditional health knowledge, including knowledge for everyday healthcare and specialized knowledge (e.g., snakebite cures).
- They harness the medicinal potential of plants for treating gastrointestinal disorders, respiratory ailments, skin conditions, and reproductive health issues.

- Yanadis have many religious beliefs and festivals connected with the forest flora.
- **Dhimsa Dance:** It is a dance performed by the Yanadi tribe during festivals and special occasions.



Species in News

Markhor

- Markhor, the **largest wild goat in the world**, is battling for survival in Jammu and Kashmir and measures must be taken to protect its habitat to increase its population.
- The markhor is a **wild goat species indigenous to the mountainous regions of Central and South Asia**.
- It is known for its thick fur, flowing beard and corkscrew horns.
- It is considered to be an apt flagship species for catalyzing conservation in these mountain tracks.
- It is adapted to **mountainous terrain**, between 600 and 3,600 m elevation, with open woodlands, scrublands and light forests.
- It is a **diurnal animal** and is mainly active in the early morning and late afternoon.

Geographical distribution:

- It is found in the moist to semi-arid mountain tracts of Pakistan, India, **Afghanistan, Uzbekistan, Turkmenistan and Tajikistan**.
- In J&K, Markhor's population is found in Shopian, Banihal pass to Shamsbari area of the Kazinag Uri and Pir Panjal range in Poonch.
- **Conservation status**
 - IUCN : 'Near Threatened'
 - Wildlife (Protection) Act, 1972 : Schedule I
 - CITES: Appendix I

Places in News

Kalka-Shimla Heritage Railway Track



- Himachal Pradesh CM has requested the Centre to consider running the Kalka-Shimla narrow-gauge railway—a **UNESCO World Heritage Site**—on

green hydrogen to promote clean energy.

- The Kalka-Shimla Railway is a narrow-gauge railway with a width of 2 ft 6 in (762 mm).
- It was constructed in 1898 to link Shimla with the broader Indian rail system under the guidance of chief engineer H. S. Harington.
- The total length of the railway is approximately 96.6 km.
- This engineering marvel features 107 tunnels, of which 102 are still in use, along with 864 bridges along its route.
- On 8 July 2008, it was designated as a UNESCO World Heritage Site as part of the Mountain Railways of India.
- Three of the lines, the Darjeeling Himalayan Railway, the Nilgiri Mountain Railway, and the Kalka-Shimla Railway, are collectively designated as a UNESCO World Heritage Site under the name "Mountain Railways of India".
- Two more, the **Matheran Hill Railway** and the **Kangra Valley Railway**, are on the tentative list of **UNESCO World Heritage Sites**.
- The **Nilgiri Mountain Railway** is also the only rack and pinion railway in India.

Gobind Sagar Lake

- It is a manmade reservoir located in the Una and Bilaspur districts of **Himachal Pradesh**.
- It is named in honour of Guru Gobind Singh, the tenth Sikh Guru.
- Its **source is the Bhakra Dam on the Sutlej River**.
- One of the **world's highest gravity dams, the Bhakra dam** is perched at an elevation of 225.5 m above its lowest foundations.

- Gobind Sagar reservoir is 90 k.m. long and encompasses an area of approximately 170 sq. k.m.
- The maximum and mean depths of the reservoir are 163.07 m and 55 m, respectively, making it one of the deepest man-made lakes in the world. It is surrounded by lush green hills and the snow-capped peaks of the Himalayas.
- It is also the third-largest in the country concerning the storage of water.
- It helps in supplying water for irrigation to the states of Himachal Pradesh, Punjab, Haryana, and Rajasthan, significantly benefiting agriculture in the region.



Dzaleka Refugee Camp

- It is the only permanent refugee camp in **Malawi**.
- It was established in 1994 in response to a surge of forcibly displaced people fleeing genocide, violence, and wars in Burundi, Rwanda, and the Democratic Republic of Congo (DRC).
- For the past 30 years, the camp has received refugees and asylum seekers from Somalia, Ethiopia, and other countries.



Tumaini Festival :

- Founded in 2014, the Tumaini Festival is a cultural event held annually within the **Dzaleka Refugee Camp in Malawi**.
- It is the only festival of its kind in the world that is held within a refugee camp.
- The festival is organized and managed by refugees, creating a platform for displaced people that fosters community, solidarity, and cultural exchange.
- The Tumaini Festival attracts thousands of attendees every year and features performances by acts from all around the world.
- The festival showcases a diverse array of artistic expressions, including music, dance, theater, and visual arts.
- It received a Cultures of Resistance Award (CoR Award) in 2024.

Key Facts about Malawi:

- It is a **landlocked country in Southeastern Africa**.
- It shares borders with **Tanzania, Mozambique, and Zambia**.
- Capital: **Lilongwe**
- Major languages: English and Chichewa (both official)
- Endowed with spectacular highlands and extensive lakes, it occupies a narrow, curving strip of land along the **East African Rift Valley**.
- **Lake Nyasa** (one of the deepest lakes in the world), known in Malawi as Lake

Malawi, accounts for more than one-fifth of the country's total area.

- Malawi remains **one of the poorest countries in the world**.
- The economy is heavily dependent on agriculture, which employs over 80% of the population.



Practice Questions

Q1 : The MIG-29 is a 4th generation, Light-weight air-superiority fighter aircraft developed by which of the following countries?

- France
- Russia
- Germany
- USA

Q2 : Consider the following statements regarding Hydrogels

1. They three-dimensional network composed of hydrophobic polymers synthesized by crosslinking water-soluble polymers.
2. Hydrogels can retain a large quantity of water within their network without disturbing their original structure.
3. It is a "smart" material that can change its structure in response to its

environment, such as the local temperature, pH, salt or water concentration.

How many of the above statements are correct?

- A. Only One
- B. Only Two
- C. All of the above
- D. None of the above

Q3: Yanadis are one of the major scheduled tribes of which of the following states?

- A. Sikkim
- B. Ladakh
- C. Andra Pradesh
- D. Nagaland

Q4 : The Dzaleka Refugee Camp often seen in the news is located at which of the following countries?

- A. Congo
- B. Malawi
- C. Chad
- D. Algeria

Q5 : The Gobind Sagar Lake is a manmade reservoir located in which of the following states?

- A. Himachal Pradesh
- B. Punjab
- C. Haryana
- D. Uttarakhand

Answers

1. B
2. C
3. C
4. B
5. A