



Daily Current Affairs Prelims Quiz 25-11-2023 (Online Prelims Test)

1) Consider the following statements with respect to H9N2

1. H9N2 is a subtype of the influenza A virus.
2. It belongs to a group of viruses that only infect birds.

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : a

H9N2

Union Health Ministry recently released a statement that mentioning that it is closely monitoring the reported outbreak of H9N2 cases and clusters of respiratory illness in children in northern China.

- **H9N2 is a subtype of the influenza A virus, which causes human influenza as well as bird flu.**
- H9N2 viruses are found worldwide in wild birds and are endemic in poultry in many areas.
- Poultry is considered a genetic incubator for the origin of the H9N2 novel avian influenza virus that infects humans.
- H9N2 viruses could potentially play a major role in the emergence of the next influenza pandemic.
- *The first case globally was reported from Hong Kong in 1998.*
- The first case for humans in India was observed in February 2019 during a community-based surveillance study in 93 villages of Korku tribes in Melghat district of Maharashtra.
- H9N2 viruses have been observed in poultry in India several times.
- H9N2 virus infections in humans are rare, but likely under-reported due to typically mild symptoms of the infections.
- **Symptoms** - It includes mild, flu-like symptoms or eye inflammation to severe, acute respiratory disease.
- According to the World Health Organisation, it can lead to infections ranging from mild, flu-like symptoms or eye inflammation to severe, acute respiratory disease or death.
- **Prevention** - To prevent contracting the virus, individuals must minimise contact with animals in areas known to be affected by animal influenza viruses.
- Humans must stay from farms and settings where live animals may be sold or slaughtered.

2) Consider the following statements with respect to the Methods of Carbon Dioxide Removal (CDR)

1. Direct air carbon capture and storage (DACCS) is a CDR method that uses sophisticated

technologies to remove carbon from atmosphere.

2. The growth of a natural forest is a traditional method of Carbon Dioxide Removal (CDR).
3. Biochar method involves pulverising silicate rocks to bypass the conventionally slow weathering action.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

Answer : a

Carbon Dioxide Removal (CDR)

In the recently released Emissions Gap report, it mentions that delaying greenhouse gas (GHG) emissions reduction will further increase the future dependence on carbon dioxide removal (CDR) from the atmosphere.

- Carbon dioxide removal, or CDR is using technologies, practices, and approaches to remove carbon dioxide from our atmosphere through deliberate and intentional human actions.
- CDR includes traditional methods like afforestation, as well as more sophisticated technologies like direct air carbon capture and storage (DACCS).
- **Natural processes, like the growth of a natural forest, are not CDR methods.**
- The methods of Carbon Dioxide Removal (CDR) includes:
 1. Biochar
 2. Bioenergy with carbon capture and storage (BECC)
 3. Direct air carbon capture and storage (DACCS)
 4. Enhanced rock weathering
 5. Ocean alkalinity enhancement
- CDR also includes durable and efficient storage of extracted carbon dioxide in natural reservoirs like soil and vegetation or in manufactured products like carbonated drinks.
- **Biochar** - *Is the substance produced by burning organic waste from agricultural lands and forests in a controlled process called pyrolysis.*
- Pyrolysis involves the burning of wood chips, leaves, dead plants, etc. with very little oxygen and the process releases a significantly small quantity of fumes.
- Although it resembles common charcoal in appearance, the production of biochar reduces contamination and is a method to safely store carbon.
- Biochar is a stable form of carbon that cannot easily escape into the atmosphere.
- **Bioenergy with carbon capture and storage (BECCS)** - Is similar to biochar in the sense that it also uses biomass to produce energy while preventing the release of carbon dioxide into the atmosphere.
- BECCS involves bioenergy production, often through combustion to generate electricity or heat.
- The resulting CO₂ emissions from this combustion are captured and stored underground, preventing them from contributing to the greenhouse effect.
- **Direct air carbon capture and storage (DACCS)** - Extracts CO₂ directly from the atmosphere at any location.
- This captured CO₂ is then permanently stored in deep geological formations or used for other applications.
- The captured CO₂ is then compressed under high pressure and pumped into deep geological formations. The gas can also be used in industries, like carbonated drinks.
- **Enhanced rock weathering** - It involves pulverising silicate rocks to bypass the

conventionally slow weathering action.

- The resultant product, usually a powder, has higher reactive surface area, which is then spread on agricultural lands for further chemical reactions.
- **Ocean alkalinity enhancement** - It involves adding alkaline substances to seawater to accelerate this natural sink.
- Like forests and green patches on land, oceans are also vast natural sinks for carbon.
- Alkaline substances in the ocean can convert dissolved, inorganic CO₂ in water into bicarbonates and carbonates, which are stable forms of carbon with extensive lifetimes.
- The CO₂ deficit thus created is balanced by absorbing more of the gas from the atmosphere into the water.

3) Consider the following passage.

The temple is located in the middle of a pond. It is dedicated to Lord Brahma. It was remodelled by Zamindar Vasireddy Venkatadri Nayudu during the 18th century A.D. It is located in the Chebrolu village of Guntur district.

The above passage best describes which of the following temple?

- a. Bhimeswara Temple
- b. Sri Venkateswara Temple
- c. Kanaka Durga Temple
- d. Chaturmukha Brahmeswara Temple

Answer : d

Chaturmukha Brahmeswara Temple

- The temple is dedicated to Lord Brahma.
- **The temple is located in Chebrolu, Guntur district of Andhra Pradesh.**
- It is also called as that has a Sivaling and the 4 faces of Lord Brahma attached to it.
- The temple, sitting in the middle of a pond, was remodelled by Zamindar Vasireddy Venkatadri Nayudu during the 18th century A.D.
- The temple along with the 3 temples in the town forms Trinity in Hinduism.
- Chaturmukha Brahmeswara along with temples such as Bhimeswara, Adikesava and Nageswara in the town forms Trinity in Hinduism.
- Trinity in Hinduism includes Lord Brahma along with Lord Vishnu and Lord Siva.
- All the temples were built between the 9th and 12th century A.D.

4) Atlanta Bay, often seen in the news, is located in which of the following oceans?

- a. Atlantic Ocean
- b. Indian Ocean
- c. Pacific Ocean
- d. Arctic Ocean

Answer : b

Atlanta Bay

The Minister of Ports, Shipping and Waterways Bulk recently said that the cargo transshipment hub is planned to be developed in Atlanta Bay in Andaman and Nicobar.

- Atlanta Bay is located near Diglipur in Andaman and Nicobar Islands of **Indian Ocean**.
- The Atlanta bay is just 50m distance in sea.
- The other important bay in Andaman and Nicobar Islands includes:

1. Galathea Bay

2. Campbell Bay

- A Bulk Cargo transshipment hub is planned to be developed in Atlanta Bay.
- This transshipment hub is on the route connecting East and Northeast India to East and South East Asia, countries in the Australia-New Zealand region.
- It is also on the route through which coal, sand and other construction materials, as well as iron ore are transported to Bangladesh and Myanmar.

5) Arrange the following electromagnetic spectrum from waves having longest wavelength to shortest wavelength.

1. Radio waves
2. Infrared
3. Micro waves
4. X-rays
5. Gamma rays

Choose the correct codes

- a. 1, 2, 3, 4 and 5
- b. 5, 4, 3, 2 and 1
- c. 1, 3, 2, 4 and 5
- d. 1, 3, 4, 2 and 5

Answer : c

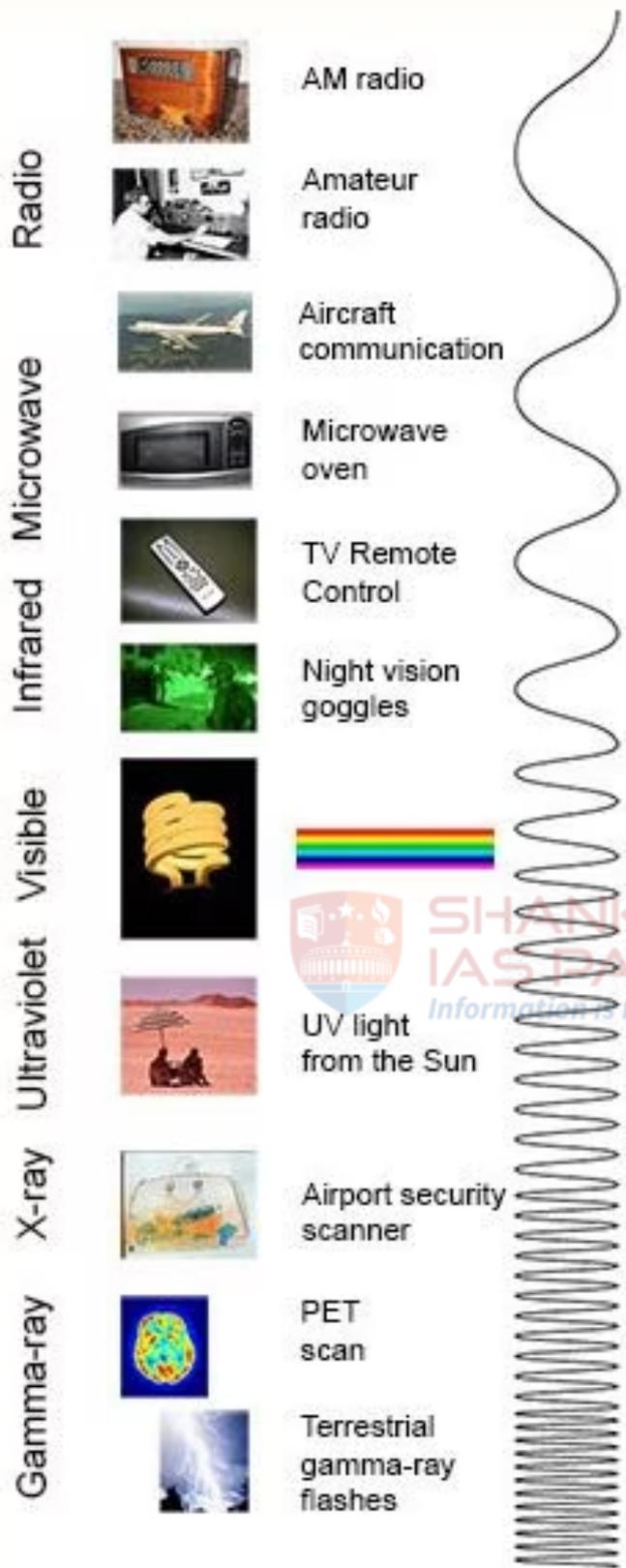
Electromagnetic Spectrum

Recently NASA spacecraft, Psyche successfully fired a laser signal at Earth as part of a mission to test high-bandwidth optical communications to Earth.

- The electromagnetic spectrum is a range of wavelengths of electromagnetic radiation.
- Energy is propagated through space in the form of electromagnetic (EM) waves, which are composed of oscillating electric and magnetic fields.
- EM waves do not require a substance (like air or water) to travel through and can travel through empty space.
- In a vacuum, all EM waves travel at the same speed which is at the speed of light (which is itself an EM wave).
- Like all waves, an EM wave is characterised by its wavelength, and the range of wavelengths we observe, from very long to very short, is what is referred as the EM spectrum.
- From long to short wavelength, the EM spectrum includes radio waves, microwaves, infrared, visible light, ultraviolet, x-rays and gamma rays.



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The electromagnetic spectrum from lowest energy/longest wavelength (at the top) to highest energy/shortest wavelength (at the bottom). (Credit: NASA's Imagine the Universe)

- Spacecraft encode data on various bands of electromagnetic frequencies.
- Currently most space communication is carried out using radio waves, having the highest wave lengths but lowest frequencies in the electromagnetic spectrum.
- Higher bandwidths (range of frequencies) carry more data per second.
- Radio waves are more widely used for communication than other electromagnetic waves primarily because of their desirable propagation properties, stemming from their large wavelength.
- Shorter wavelengths tend to scatter when in contact with any interference.

