

Weekly Quiz Answers (28th Aug- 3rd Sept)

Ans1. B

Explanation:

Context: In India, 74% can't afford a healthy diet: UN agency report State of Food Security and Nutrition in the World' (SOFI) 2023 says.

- While food prices remain relatively low in India, a healthy diet is unaffordable to nearly three-fourth of the people given their low incomes.

Key Highlights

- The report, 'State of Food Security and Nutrition in the World' (SOFI) 2023, shows that while the cost of a healthy diet has increased in recent years in India, it is still the lowest among the BRICS nations (including the newly added six countries) and India's neighbours.
- However, the share of people who are able to afford such a healthy diet is still low: India features at the bottom of that list since income levels are stagnant or going down.
- SOFI is **published by** the Food and Agriculture Organization and jointly produced with fellow United Nations agencies.
- The Data Point published concluded that the cost of meals in Mumbai rose by 65% in five years, while salaries/wages rose by just 28%-37%.
 - Mumbai was chosen as an exemplar due to the availability of consistent data.
 - Today's analysis takes a broader view by comparing India's numbers with other countries.
- In the SOFI report, the cost of a healthy diet is arrived at by looking at the cheapest local food items that meet dietary guidelines.
 - The cost and availability of such food items is averaged from national data. To check if the diet is affordable, its cost is compared to the average income in each country.
 - A diet is considered too expensive if it costs more than 52% of a country's average income.
 - This percentage is based on data showing that people in low-income countries spend about 52% of their income on food.
 - The percentage of people who cannot afford this diet is then calculated by using income distributions within a nation.

Ans2. B

Explanation:

LK-99 has been claimed by South Korean scientists as a superconductor at room temperature and atmospheric pressure. However, currently scientists have discarded their claims.

- ✓ Many metals become superconducting – i.e. allow current to flow with zero resistance – if cooled to below -250° C.
- ✓ Superconductors aren't just materials with zero resistance: they have a remarkable new quantum state in which the electrons in the material work together.
- ✓ Several fantastic properties of superconductors then came to light, opening the door to new technologies – including advanced medical imaging, 'maglev' trains, and quantum computers.

- ✓ Superconductivity also remained an extremely-low temperature-phenomenon for a long time. It was only in the mid-1980s that scientists discovered copper-oxide superconductors, whose transition temperature was higher than -200°C .
- ✓ One of the highest transition temperatures has been found in a sulphide compound, but it needs to be placed under extreme pressures – like that found at the centre of the earth.

Ans3. C

Explanation:

A payload on board Chandrayaan-3's lander, Vikram, has completed the first in situ measurements of the surface-bound lunar plasma environment over the south polar region.

- The Radio Anatomy of Moon Bound Hypersensitive Ionosphere and Atmosphere-Langmuir Probe (RAMBHA-LP), named after American chemist Irving Langmuir, who was awarded the Nobel Prize in Chemistry, is a device used for characterising plasma.

Key Highlights

- The initial assessment indicates that the plasma encompassing the lunar surface is relatively sparse, characterised by a number density ranging from approximately 5 to 30 million electrons per cubic metre.
- This evaluation specifically pertains to the early stages of the lunar daytime.
- The probe operates without interruption, aiming to explore the changes occurring in the near-surface plasma environment throughout the lunar day.

Ans4. D

Explanation:

In AI-assisted chest X-rays, India has a powerful technology to screen for presumptive TB.

- The AI algorithm qXR, developed by Mumbai-based Qure.ai, can help detect people with presumptive TB early and in less than a minute.
- The 2019-2021 National TB prevalence survey in India report said nearly 43% of TB cases would have been missed without a chest X-ray.
- When used at scale for population-based screening or for targeted screening, qXR plus molecular tests for TB confirmation can increase detection rates.

Ans5. C

Explanation:

Context: In a move to check domestic rice prices and ensure domestic food security, the Indian government has prohibited the export of **white rice**, levied a 20% export duty on **par-boiled rice** till October 15, and permitted the export of **Basmati rice** for contracts with value of \$1,200 a tonne or above.

- The export of broken rice has been prohibited since last September. However, it is allowed on the basis of permission granted by the government to other countries to meet their food security needs and based on the request of their government.

About Rice Exports

India is the largest rice exporter globally with a 45% share in the world rice market.

- ✓ Overall rice exports in April-May of 2023 were 21.1% higher compared with the same period last financial year.
- ✓ In May alone, export of Basmati rice was 10.86% higher than its exports in May 2022.

- 3

Ans8. C

Explanation:

- The number of such equatorial-origin cyclones was 43% less in the period from 1981 to 2010 compared with 1951 to 1980, and this was because the PDO was in a 'warmer' or positive phase.
- A warming of the Central Equatorial Pacific, called an El Nino, often corresponds to reduced rainfall over India whereas cooler-than-normal temperatures, or a La Nina, is linked to excessive rainfall.
 - This pattern, collectively called the El Nino Southern Oscillation (ENSO) phenomenon, repeats in the Pacific over two to seven years.
- However, the PDO is not an annual occurrence and, on an average, corresponds to a warmer than average Western Pacific Ocean and relatively cooler Eastern Pacific, though this plays out over much longer time scales.
 - However, unlike an ENSO, a 'positive' or 'warmer phase' of a PDO can be known only after several years of measuring ocean temperatures and their interaction with the atmosphere.
- In 2019, the PDO entered a cooler, negative phase and if it remains so, could mean more tropical cyclones in the post-monsoon months that originate near the equator.
- It's usually rare for cyclones to form near the Equator but when the waters are warm, they can gain more moisture and rise in intensity.
- An El Nino is developing in the Pacific, the effects of which are manifested in central and southern India, which have recorded rainfall deficits of 7% and 17%, respectively.

ENSO and PDO

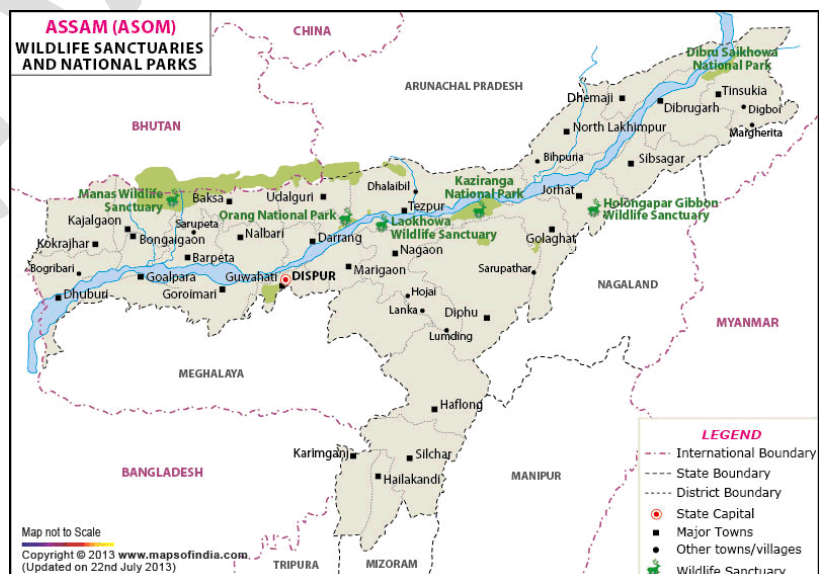
- ✓ ENSO with a positive PDO is generally not good, however, ENSO with a negative PDO brings more rain to India.
- ✓ If both ENSO and the PDO are in the same phase, it is believed that El Niño/La Nina impacts may be magnified.

Ans9. D

Explanation:

About Hollongapar Gibbon Sanctuary

- ✓ Housing about 125 hoolock gibbons, India's only ape, the sanctuary in the Jorhat district of Assam, India and covers an area of 21 sq. km.
- ✓ It was established in 1997 as a protected area primarily to conserve the western hoolock gibbon, an endangered primate species.
- ✓ Set aside initially in 1881, its forests used to extend to the foothills of the Patkai mountain range.
- ✓ It contains India's only gibbons – the hoolock gibbons, and Northeastern India's only nocturnal primate – the Bengal slow loris.



Ans10. C

Explanation:

Loanable Funds Theory: Concept

It is also known as the neo-classical theory of interest.

- ✓ This theory argues that the interest rates on loans are determined by the supply of and demand for loans in the market for loanable funds.
- ✓ In other words, the market interest rate is seen as the price of loans and it is thought to be determined just the way the price of any other good or service is determined in the market.
- ✓ So, a rise in the supply of loanable funds from savers such as households is believed to cause the market interest rate to drop while a drop in the supply of loanable funds is seen as causing a rise in market interest rates.
- ✓ On the other hand, a rise in the demand for funds from borrowers such as businesses and governments is supposed to cause a rise in interest rates while a drop in their demand for funds is expected to cause a fall in interest rates.
- ✓ In short, the supply of funds from lenders and the demand for funds from borrowers are seen as influencing the market interest rate.

Ans11. B

Explanation:

- Gibbons, the smallest and fastest of all apes, live in tropical and subtropical forests in the south-eastern part of Asia.
- The hoolock gibbon, unique to India's northeast, is one of 20 species of gibbons on Earth.
- The estimated population of hoolock gibbons is 12,000.
- Like all apes, they are extremely intelligent, with distinct personalities and strong family bonds.
- Unfortunately, the current conservation status of gibbon species is alarming – all 20 species are at a high risk of extinction.
- Since 1900, gibbon distribution and populations have declined dramatically, with only small populations in tropical rainforests.
- The hoolock gibbon faces threats primarily from the felling of trees for infrastructure projects.
- GGN was founded with a vision to safeguard and conserve a key element of Asia's unique natural heritage – the singing gibbon and their habitats, by promoting participatory conservation policies, legislations, and actions.
- American naturalist R. Harlan was the first to describe the hoolock gibbon, characterized by their vigorous vocal displays, from Assam in 1834.
- Over the decades, zoologists thought the Northeast housed two species of the ape
- The eastern hoolock gibbon (*Hoolock leuconedys*) found in a specific region of Arunachal Pradesh.
- It lives in certain areas of Arunachal Pradesh and Assam in India, as well as in parts of southern China and northeastern Myanmar.
- The western hoolock gibbon (*Hoolock hoolock*) distributed elsewhere in the northeast.

- It is found in all the states of North-East India, but its range is limited to the area between the south of the Brahmaputra river and the east of the Dibang river. Outside of India, it can be found in eastern Bangladesh and north-west Myanmar.

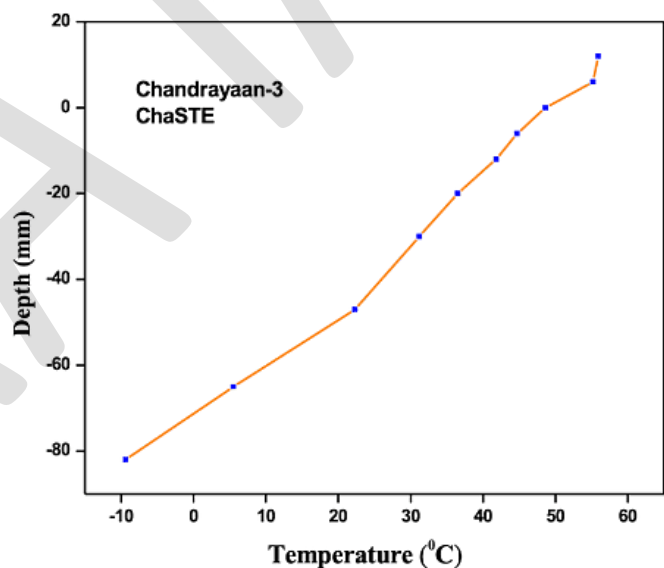
Ans12. A

Explanation:

According to the space agency, ChaSTE measured the temperature profile of the lunar topsoil around the South Pole, to understand the thermal behaviour of the moon's surface.

- The payload has a temperature probe equipped with a controlled penetration mechanism capable of reaching a depth of 10 cm beneath the surface.
- The probe is fitted with 10 individual temperature sensors.
- The presented graph illustrates the temperature variations of the lunar surface/near-surface at various depths, as recorded during the probe's penetration.
- This is the first such profile for the lunar South Pole. Detailed observations are underway," it said.
- For the first time in lunar history, the top soil of the South Pole has been profiled to understand the thermal behaviour of the moon's surface.
- ISRO released a graph of the temperature variation on lunar surface with increase in depth.
 - It was found that at a depth of 8 cm, the temperature was as low as (-) 10 degrees centigrade.
 - With gradual rise towards the surface, the temperature too was seen to be rising.
 - Above the surface, the graph showed a relative stagnancy in temperature between 50-60 degrees centigrade.
 - Putting it in perspective, a scientist explained that when we go two to three centimetres inside the Earth, we hardly see two to three degree centigrade variation. We believed that on the moon the temperature would be somewhere between 20° Celsius and 30° Celsius on the surface, but the variation is between 70°C and -10°C. This is surprisingly higher than what we had expected.

Variation of temperature on lunar surface with increase in depth



Ans13 D

Explanation:

Pragyan, the rover of the Chandrayaan-3 mission, has confirmed the presence of sulphur on the moon's surface, near its south pole, and is still searching for hydrogen, the Indian Space Research Organisation (ISRO) said.

Ans14. C

Explanation:

Goa Shipyard Ltd. and Kenya Shipyard Ltd. signed a memorandum of understanding (MoU) for capacity building and collaboration in ship design and construction.

Key Highlights

- The MoU was signed as Defence Minister Rajnath Singh and Kenyan Cabinet Secretary for Defence Aden Bare Duale discussed defence industry cooperation during talks.
- Both the Ministers agreed that the defence relationship between the two countries has evolved from being training-centric to include more strategic aspects.
- The two Ministers also concurred on the need for deeper cooperation in maritime security of the Indian Ocean region.
- As a token of friendship, Mr. Singh presented 15 pairs of parachutes (main and reserve) manufactured by Gliders India Ltd. to the Kenyan Cabinet Secretary for Defence for use by the Kenyan forces.
- India also extended support towards setting up of an advanced CT scan facility in Kenya.



Ans15. A

Explanation:

- TB is caused by a bacterium called Mycobacterium tuberculosis, belonging to the Mycobacteriaceae family consisting of about 200 members.
- In humans, TB most commonly affects the lungs (pulmonary TB), but it can also affect other organs (extra-pulmonary TB).
- TB is spread from person to person through the air. When people with lung TB cough, sneeze or spit, they propel the TB germs into the air.
- Common symptoms of active lung TB are cough with sputum and blood at times, chest pains, weakness, weight loss, fever and night sweats.
- MultiDrug Resistant Tuberculosis (MDR-TB) is a strain of TB that cannot be treated with the two most powerful first-line treatment anti-TB drugs.
- Extensively Drug Resistant Tuberculosis (XDR-TB) is a form of TB caused by bacteria that are resistant to several of the most effective anti-TB drugs.