

Weekly Quiz Answers (10th-16th July)

Ans1. C

Explanation:

Context: Under the Namami Gange Programme, large-scale human efforts have been undertaken since 2014 to clean the Ganga and rejuvenate the nearly 2,600-km river network. In this, marine life, especially turtles, has been playing a key role as well.

- In 2014, the Wildlife Institute of India (WII) and the Ministry of Forest joined hands with the National Mission for Clean Ganga (NMCG), the agency implementing the Namami Gange Programme.
- Since 2017, they have been running the turtle breeding and rehabilitation centre in Uttar Pradesh's Varanasi.
- About a dozen of the 29 turtle species in India, both herbivorous and carnivorous, help by clearing rotten or half-burnt human bodies as well as flowers dumped into the river here.
- Roughly 5,000 turtles have been released since 2017. This year, 1,000 more will be released to strengthen the programme.

Role of Turtles

- The turtles feed on meat and waste products thrown in the river.

Observations

- Improvements in biochemical oxygen demand (BOD), fecal coliform (FC) and dissolved oxygen (DO) levels were seen during river water quality checks.
- During the assessment of the river's pH levels (i.e. acidic nature) at various locations, officials found that the water quality was suitable for bathing.
- In 20 locations, they found improved levels of DO, BOD and FC at 16, 14 and 18 locations, respectively.
- "It is a long-term biological process and it will take time to know whether these species are playing a major role or not, after 10-15 years.

Ans2. A

Explanation:

Primary Forests

Primary forests are mature, natural forests that have remained undisturbed in recent history.

- ✓ They often store more carbon than other forests and are rich sources of biodiversity.
- ✓ Primary forest loss is almost irreversible in nature.
- ✓ Even if the green cover regrows, a secondary forest is unlikely to match the extent of biodiversity and carbon sequestering capabilities of a primary forest.

Ans3. A

Explanation:

Context: Tropical areas lost 4.1 million hectares of forest cover- equivalent to losing an area of 11 football fields per minute – in 2022, new research quoted by the World Resources Institute's (WRI) Global Forest Watch has said.

- WRI measures progress on two goals – ending deforestation by 2030, and restoring 350 million hectares (mha) of lost and degraded forests by 2030 – that represent multiple global forest pledges.
 - We need to reduce global deforestation by at least 10% every year to meet the 2030 target.
 - In 2022, although the global deforestation rate was 3.1% lower than the baseline from 2018-2020, it was still over one million hectares above the level needed. This puts the world off track to meet the 2030 goal.
 - To meet the target of restoring 350 mha of forests globally by 2030, the world needs to increase tree cover by 22 mha per year, between 2021 and 2030.
 - Despite registering some gains, the overall change in tree cover in the past 20 years was a net loss of 100 mha.
 - This means that we are still losing forests and not restoring them at the required rate.
 - According to Global Forest Watch, **India** lost 43.9 thousand hectares of humid primary forest between 2021 and 2022, which accounts for 17% of the country's total tree cover loss in the period.
 - The total tree cover loss in India between 2021 and 2022 was 255, 000 hectares.
 - The total global tree cover loss in 2022 declined by 10%. This includes primary, secondary, and planted forests.
 - This decrease, according to Global Forest Watch, is a direct result of a decrease in fire-related forest losses which decreased 28% from 2021. Non-fire losses in 2022 increased by slightly less than 1%.
- Brazil and the Democratic Republic of Congo are the two countries with the most tropical forest cover, and both registered losses of this resource in 2022.
 - Ghana and Bolivia also rapidly lost their primary forest cover.
 - On the other hand, Indonesia and Malaysia managed to keep their primary forest cover loss to record-low levels in 2022.

Ans4. C

Explanation:

NPAs are bad loans that the borrower is not in a position to repay at the moment. A loan turns bad or becomes an NPA if it is overdue for over 90 days. The NPA ratio is the proportion of such NPAs in total loans.

Classification of Non-Performing Assets

- Sub-standard: When the NPAs have aged ≤ 12 months.
- Doubtful: When the NPAs have aged > 12 months.
- Loss assets: When the bank or its auditors have identified the loss, but it has not been written off.

Ans5. D

Explanation:

Explanation: DRDO is a network of over 50 laboratories involved in the development of defence technologies across various disciplines.

Ans6. D

Explanation:

The profitability of the banking sector has seen a marked improvement, with the Return on Assets (RoA) climbing to 1.1% in 2023, up from a negative 0.2% in 2018.

- RoA is calculated by dividing the net income of a bank by its total assets. An RoA of $\geq 1\%$ is generally considered good.
- This positive shift has contributed to the Capital to Risk-Weighted Assets Ratio (CRAR) hitting a record peak of 17.1% in 2023.
- A key indicator of a bank's health is its capital position, especially its CRAR that measures the bank's exposure to riskier loans.

Ans7. C

Explanation:

What is NRF?

- Setting up the NRF was one of the key recommendations of the National Education Policy 2020.
- The NRF intends to act as a coordinating agency between researchers, various government bodies and industry, thus bringing industry into the mainstream of research.
- In addition to providing research grants to individuals, the NRF plans to seed, grow and facilitate research in India's universities, especially State universities, by funding research infrastructure and researchers.

How will NRF be funded?

- ✓ The NRF will operate with a budget of ₹50,000 crore for five years, of which 28% (₹14,000 crore) will be the government's share, and the remaining 72% (₹36,000 crore) will come from the private sector.
- ✓ The NRF draft proposes the government's share to increase eventually to ₹20,000 crore per year.
 - Out of the government's share, ₹4,000 crore will be used from the existing Science and Engineering Research Board's budget, which will be subsumed under the NRF.
 - Therefore, the government has earmarked an additional 10,000 crore over the next five years for the NRF.

However, this increase in the nation's gross domestic expenditure on research and development (GERD) seems too meagre, (less than 2% of GERD) especially if one compares the GDP and the comparative spending in other big economies, such as the U.S. and China.

As per the last available statistics (2017-18), India's GERD was ₹1,13,825 crore. While India's GDP was 7.6 and 5.1 times smaller than that of the U.S and China respectively, India's GERD was nearly 24 times less than both these countries during the same period. And in the last five years, that gap has further widened.

How can the NRF facilitate the "ease of doing science"?

- ✓ First, the time between applying for a research grant and receiving the money must be minimal, preferably within six months.
 - Although the NRF draft mentions that the peer-review process will be completed within six months, releasing funds may take time, pending financial clearance.
- ✓ Second, all the paperwork must be digitally processed without sending stacks of papers in hard copies to the NRF.

- ✓ Third, all finance-related queries, paperwork, approval, and acceptance need to be between the NRF and the finance department of the university/research institution keeping the scientist free to focus on research.
- ✓ Fourth, the NRF needs explicit spending guidelines away from the General Financial Rules (GFR) and the government's e-Marketplace (GeM) usage.
 - Scientific research needs independent guidelines for spending money, which provides flexibility while making scientists accountable.
- ✓ Finally, the release of money needs to be timely. Although the NRF draft mentions timely disbursement of funds, a mechanism needs to be in place to facilitate and implement this.

While the participation of the private industry in the NRF is an important and welcome step, it is unclear how the government will raise ₹36,000 crore from the industry. Although the NRF describes a legislative route to facilitate this, a more detailed plan and establishing mechanisms akin to escrow accounts will reassure the scientific community

Ans8. B

Explanation:

In the first GSI Survey of the Siachen glacier, snout surveying of five glaciers in the Ladakh region was done. These were the Siachen, Mamostong, Chong Kumdan, Kichik Kumdan and Aktash glaciers.

Ans9. A

Explanation:

About LMV-3

The LVM-3 has three stages.

- ✓ The first (or bottom-most) stage is in the form of two S200 boosters strapped to the sides of the rocket body.
 - They combust a solid fuel called hydroxyl-terminated polybutadiene.
- ✓ The second stage is powered by two Vikas engines, which combust a liquid fuel –either nitrogen tetroxide or unsymmetrical dimethylhydrazine.
- ✓ The uppermost final stage is powered by a cryogenic engine.
 - It combusts liquefied hydrogen with liquefied oxygen.
- ✓ Hydrogen has a very high specific impulse as rocket fuels go, but using it in an engine requires it to be liquefied first, which in turn means it must be stored at very low temperature, and with special pumping and transport systems.

Ans10. D

Explanation:

What is palliative care?

Palliative care is the branch of medicine focusing on improving the quality of life and preventing suffering among those with life-limiting illnesses.

- ✓ It **aims** to identify patients at risk of over-medicalisation at the expense of quality of life and financial burden on the family.

- ✓ It is often misinterpreted as end-of-life care. However, palliative care **aims** to improve the quality of life by addressing the physical, psychological, spiritual, and social domains of the health of people suffering from life-limiting diseases like heart failure, kidney failure, certain neurological diseases, cancer, etc.
- ✓ Palliative care also includes bereavement support for the caregivers in case of the death of the patient.

Ans11. A

Explanation:

The pandemic led to a decline in the educational performance of many districts in the country, reveals the Performance Grading Index for Districts (PGID) from the Education Ministry.

Key Highlights

- The Performance Grading Index for Districts (PGID) released by the Ministry as a combined report for 2020-21 and 2021-22 assesses the performance of school education system at the district level.
- This report too has 10 grades under which districts are categorised, with

Daksh being the highest grade (above 90%)	Utkarsh (81%-90%)	AtiUttam (71%80%)
Uttam (61%-70%)	Prachesta1 (51%60%)	Prachesta2 (41%50%)
Prachesta3 (31%40%)	Akanshi1 (21% to 30%)	Akanshi2 (11% to 20%)
	Akanshi3: score less than 10%	

None of the districts attained the top two grades according to the Performance Grading Index for Districts (PGI-D) combined report for 2020-21 & 2021-22. The table summarises the scores achieved by districts in the two years

Score range (%)	Number of districts in 2020-21	Number of districts in 2021-22
>90	0	0
81 to 90	0	0
71 to 80	124	51
61 to 70	277	271
51 to 60	229	290
41 to 50	86	117
31 to 40	24	18
21 to 30	0	1
11 to 20	2	0
upto 10	0	0

- While none of the districts were able to earn Daksh and Utkarsh, in the latest report, 121 districts were graded as Ati-Uttam for 2020-21, though this number fell by more than half in 2021-22, with just 51 districts making the grade.
- Further attesting to the pandemic effect, while 2020-21 had 86 districts under Prachesta-2 (sixth highest grade), this number rose to 117 in 2021-22.
- In 2021-22, Chandigarh retained its Ati-Uttam status, as well as some districts of Delhi and Gujarat.
- In Maharashtra, Satara, Kolhapur, Nashik and Mumbai achieved this status as did Kolkata.
- Tamil Nadu has several districts in the fourth-best grade (Uttam) and three — Ramanathapuram, Pudukkottai and Theni — in Prachesta-1.
- Uttar Pradesh has several districts under Uttam and Prachesta-1, and four under Prachesta-2.
- Most of the districts of Jammu and Kashmir fall under the Prachesta 1 and 2 grades.

- South SalmaraMankachar district was the only district in Assam under Akanshi-1 for 2021-22, grade) while the two grades at the bottom had no districts.

Ans12. B

Explanation:

UPI, a real-time payment system developed by the National Payments Corporation of India that allows users to link multiple bank accounts and enables instant fund transfers.

Ans13. C

Explanation:

The study found that Entamoeba histolytica infections peaked during the wet season, while Entamoeba moshkovskii showed two infection peaks during the summer and post-fall season.

Ans14. A

Explanation:

- DRDO (Defence Research and Development Organisation) was established in 1958 by merging existing organizations like the Technical Development Establishment (TDEs) and the Directorate of Technical Development & Production (DTDP) with the Defence Science Organisation (DSO).
- DRDO is a network of over 50 laboratories involved in the development of defence technologies in various disciplines such as aeronautics, armaments, electronics, combat vehicles, engineering systems, and more.

Ans15. C

Explanation:

The study mentioned that mutations were identified in the new pathogenic parasite. These mutations signify the essential role of the parasite in adapting to the human gut environment or in acquiring other enteric pathogens. This suggests that the mutations may have allowed the parasite to interact with and potentially acquire genetic material from other pathogens present in the gut, potentially leading to the acquisition of additional virulence factors or traits that enhance its pathogenicity. Therefore, the significance of these mutations lies in the potential acquisition of other enteric pathogens by the new pathogenic parasite.