

Weekly Quiz (25th Feb- 2nd March)

Ans. 1 B

Explanation

- The National Sample Survey Office (NSSO), known as NSSO, was established under the Ministry of Statistics in 1950. It was founded with the primary goal of conducting comprehensive surveys across diverse socio-economic groups to gain insights into various facets of the nation's growth and development. NSSO's surveys follow a methodical approach, spanning from six months to over a year, to gather valuable data.
- These objective surveys play a pivotal role in shaping policies and decisions. Notably, on 23rd May 2019, NSSO transformed into the National Statistical Office (NSO) following its merger with the Central Statistical Office (CSO). This amalgamation was aimed at enhancing coordination between the two entities. The NSO is overseen by the Ministry of Statistics and Program Implementation (MOSPI). Aspiring candidates preparing for exams such as the IAS will find pertinent insights into these organizations, fostering a deep understanding of NSSO's significance for upcoming examinations.

Ans 2. A

Explanation

- The FAC is a statutory body established under the Forest Conservation Act (FCA), 1980.
- The FAC considers questions on the diversion of forest land for non-forest uses such as mining, industrial projects, townships and advises the state government on the issue of granting forest clearances.
- Once the FAC is convinced and approves (or rejects a proposal), it is forwarded to the concerned State government where the land is located, who then has to ensure that provisions of the Forest Right Act, 2006, a separate Act that protects the rights of forest dwellers and tribals over their land, are complied with.
- The FAC approval also means that the future users of the land must provide compensatory land for afforestation as well as pay the net present value (ranging between Rs 10-15 lakh per hectare.).
- FAC is a statutory body headed by the Director General of Forest, MoEFCC.
- Every proposal involving more than 40 hectares of forest land, except those relating to linear projects, along with site inspection reports is referred by the Central Government to the Forest Advisory Committee (FAC).
- FAC may also suggest any condition or restrictions on the use of any forest land for any non-forest purpose.
- The Central Government, after considering the advice of the FAC grants approval to the proposal with appropriate mitigative measures or rejects the same.
- FAC's role is advisory in nature only.

Ans 3. B

Explanation

- Humpback females and calves communicate with each other using vocalizations, while males sing to attract mates.

- Some baleen whales, like humpbacks and bowheads, produce high-pitched sounds known as whale songs.
- Baleen whales use their larynx, or voice box, to produce sounds underwater, similar to humans.
- Toothed whales, including dolphins and killer whales, have a different mechanism for producing sounds, utilizing a special organ in their nasal passages.

Answer 4. A

Explanation

Down Syndrome

- It is a genetic condition characterized by an extra copy of chromosome 21, sometimes involving an additional segment of the chromosome.
- Chromosomes contain genes that carry DNA, determining one's physical traits and bodily functions.
- The presence of an extra chromosome is termed trisomy, hence Down syndrome is also known as trisomy 21.
- This additional chromosome affects the development of a baby's body and brain, resulting in both mental and physical challenges.
- Down syndrome typically occurs randomly during fetal development and is not inherited.
- While there is no cure for Down syndrome, treatment options are available to help individuals achieve their full potential.

Ans 5. D

Explanation

- It is also known as trisomy 18.
- It is an autosomal chromosomal disorder due to an extra copy of chromosome 18.
- It is a very severe genetic condition that affects child's body development and growth.
- Symptoms: Children diagnosed with trisomy 18 have a low birth weight, multiple birth defects and defining physical characteristics.

Ans 6. D

Explanation

Scientists at CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu, discovered antibiotic properties in phytocannabinoids, a class of compounds found in the cannabis plant.

How is THCBd made?

- Cannabinoids, a class of compounds in the cannabis plant, include phytocannabinoids with the prefix 'phyto' indicating their plant origin.
- Cannabinoids bind to receptors in animal bodies, producing various neurological effects.
- Researchers extracted cannabidiol from cannabis and, using palladium as a catalyst, reacted it with hydrogen, resulting in a mixture of molecules, including tetrahydrocannabidiol (THCBd).

What were THCBd's effects?

- THCBd was tested against bacterial cultures, exhibiting efficacy against Gram-positive *S. aureus*, with 0.25 g/ml termed "potent."
- THCBd showed strong effectiveness against efflux pump overexpression and MRSA strains.
- It significantly reduced viable microbial cells in *S. aureus* skin infections in mice.

- THCBD complemented or was indifferent to the effects of common antibiotics like mupirocin, penicillin G, and ciprofloxacin, suggesting potential combined use.

Ans 7. B

Explanation

- Recently, the Ministry of Tribal Affairs has brought to light the ambitious Pradhan Mantri-Janjati Adivasi Nyaya Maha Abhiyan (PM-JANMAN) Scheme. Aimed at uplifting Particularly Vulnerable Tribal Groups (PVTGs), this initiative carries the potential to address their unique challenges and provide essential infrastructure for a brighter future.

Ans 8. B

Explanation

- Most baleen whales are highly migratory, moving toward high-latitude (polar) feeding areas in the summer and toward low-latitude (tropical) calving areas in the winter.
- Variations in water temperature, food availability, and feeding habits may account for the movements of some animals.
- Some individual whales do not migrate. These may be juveniles or post-reproductive adults and may stay in protected nearshore areas.
- The baleen plates in the mouths of baleen whales are not composed of bone material; instead, they are made of keratin, the same protein found in human hair and nails. Baleen plates are comb-like structures that baleen whales use to filter small prey, such as krill, from the water during feeding.

Ans. 9. D

Explanation

Pulsar Glitches

- Mahakali river system lies to the westernmost border of Nepal. The river has its origin in Api Himal within the Himalayas. The river starts from Milan glacier of India and from the Lipulekh of Nepal and flows southward bordering Nepal and India for most of its length. Mahakali river is named “Sharda” in India. It is a part of Ghagra sub-basin of large Ganga basin. Chamelia and Surnagad river are the main tributaries of Mahakali basin towards Nepal side.
- Most of the catchment area(15,260 sq. km) of Mahakali basin lies in India while 35.4 % falls within Nepal. The average discharge of Mahakali river is about 658 m³/s at Sharada Barrage while the flow fluctuates heavily during monsoon and winter season. There are altogether 9 glacial lakes and 164 glaciers within Mahakali river basin in Nepal (CBS 2019).

Ans. 10. C

Explanation

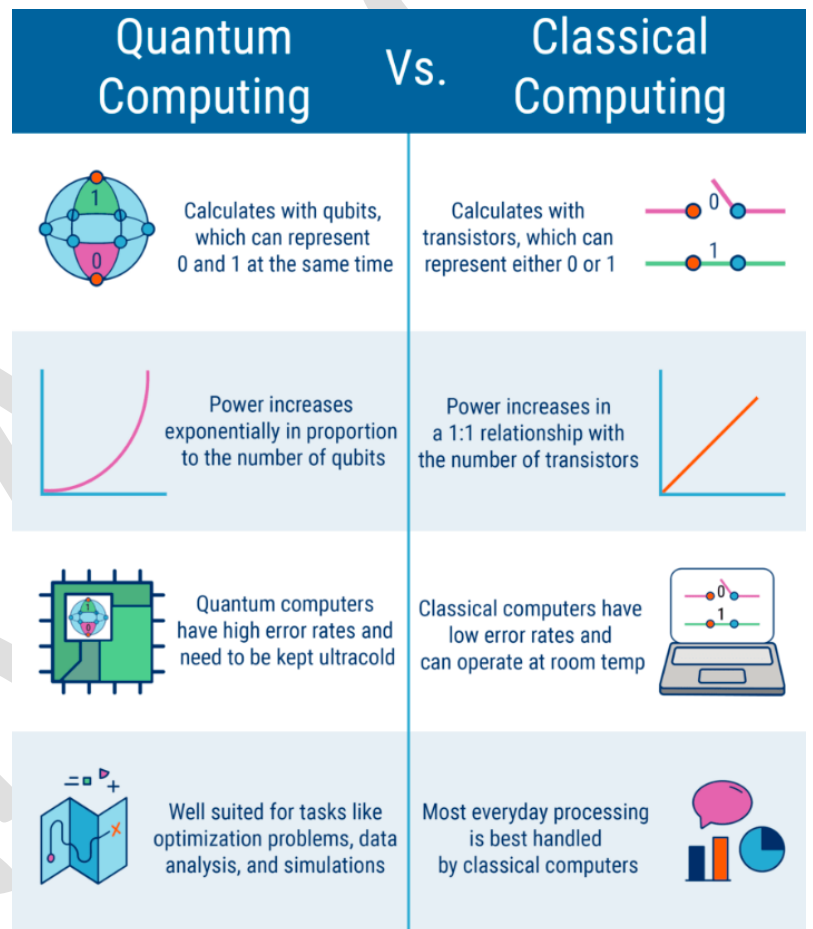
- **Blue Whale (*Balaenoptera musculus*):** The blue whale is the largest animal on Earth, with a distinctive mottled blue-gray appearance. It primarily feeds on krill and is found in oceans globally.
- **Humpback Whale (*Megaptera novaeangliae*):** Known for their acrobatic behavior, humpback whales are identified by their long pectoral fins and complex songs. They undertake extensive migrations for breeding and feeding.

- **Gray Whale (*Eschrichtius robustus*):** Gray whales are known for their long migrations between Arctic feeding grounds and breeding lagoons in warmer waters. They exhibit a benthic feeding strategy, scooping sediment and prey from the seafloor.
- **Minke Whale (*Balaenoptera acutorostrata*):** Minke whales are the smallest of the baleen whales and are characterized by a streamlined body. They are found in various oceanic regions and are known for their elusive nature.

Ans 11. B

Explanation

- Conventional computers (in common use like homes/offices) and Supercomputers process information with bits (ones and zeroes). Quantum computers, on the other hand, use quantum bits or qubits that can process the ones and zeroes simultaneously due to a property known as superposition. This allows them to process a lot more information than conventional computers.
- Conventional Supercomputers combine processing power of thousands of computers. However, supercomputers aren't very good at solving certain types of problems e.g., Supercomputers don't have the working memory to hold the myriad combinations of real world problems. Supercomputers have to analyze each combination one after another, which can take a long time.
- On the other hand, the computing power of quantum computers increases exponentially (by a factor of 2) with increase in qubits e.g., In October 2019, Google said it had performed a calculation on a quantum processor in 300 seconds that would have been practically impossible to achieve with the algorithms available at the time.



Ans 12. B

Explanation:

About Madhika Language

- Madhika is a language devoid of a script, blending elements from Telugu, Tulu, Kannada, and Malayalam.
- Despite its similarity to Kannada, Madhika can perplex listeners due to its diverse linguistic influences.

- The language is significantly influenced by Havyaka Kannada, an ancient form of Kannada.
- Neglect of Madhika is linked to the social stigma faced by the Chakaliya community, who were historically considered untouchables.
- The absence of documentation (no script) and the passing of older speakers pose a substantial risk to the survival of Madhika.

Ans 13. D

Explanation

- The Indian leopard has a well-developed tail, short ears and strong legs. Their eyes are yellowish grey with light grey ocular bulbs. It's spots fade towards the underbelly and the lower part of the legs. The white-tipped tail is 60-100 cm long. Its rosettes are the most prominent among all leopard subspecies of Asia.
- The Indian Leopard is solitary and active at night. It is skilled in climbing trees from where it rests, observes its area and feasts on its prey. Along with being a good swimmer (though not as good as the Bengal Tiger), the leopard can run at the speed of 58 kms per hour and jump upto 3 m vertically.
- The Act mandates that state governments and tribal communities be consulted before approving the diversion of forestland. The consultation process ensures that the views of local stakeholders are taken into account, and their concerns are addressed.
- **Overall population:** India's leopard population increased by 8% from 12,852 in 2018 to 13,874 in 2022.
- **Regional variation:** Central India's leopard population remains stable or slightly growing, while the Shivalik hills and Gangetic plains experienced a decline.
- **State-level distribution:** Madhya Pradesh has the highest number of leopards (3,907), followed by Maharashtra, Karnataka, and Tamil Nadu.
- **Benefits From Tiger Conservation Efforts:** The Central India and Eastern Ghats landscape, home to the largest leopard population, is benefiting from tiger conservation efforts.
- **Common Threats:** Threats include poaching, habitat loss due to human activities, and road accidents.

Ans 14. C

Explanation

- G-Sec are tradable instruments issued by the Central Government or State Governments to borrow money from the public to finance Fiscal Deficit.
- They represent a contractual obligation by the issuer to pay the holder a fixed amount of money, known as principal or face value, on a specified date.
- G-Sec include short-term treasury bills and long-term government bonds or dated securities.
- They are considered risk-free gilt-edged instruments and are issued by both Central and State Governments.
- Types of G-Sec include Treasury Bills, Cash Management Bills, Dated G-Secs, and State Development Loans (SDLs).

Ans 15. D

Explanation

- E-Amrit Portal was launched by NITI Aayog during COP26.

- (Accelerated e-Mobility Revolution for India's Transportation) portal for creating awareness about electric mobility in India.
- A one-stop destination for all information on electric vehicles—busting myths around the adoption of EVs, their purchase, investment opportunities, policies, subsidies, etc.
- e-AMRIT is the result of a joint initiative between NITI Aayog and the UK Government.