

## Answers

1) C

It is a directional ejection of a large mass of highly magnetised particles from the sun.

- When the earth is in the direct path of such solar storms, these magnetised and charged solar particles will interact with the earth's magnetic field and induce strong electric currents on the earth's surface.
- Hence, power grids, oil and gas pipelines, and networking cables are the most vulnerable.
- Powerful solar super-storms can destroy long-distance undersea cables leading to massive Internet disruption lasting for several months.
- Undersea cables have a higher risk of failure compared to land cables due to their large lengths as current is proportional to the area of the loop formed by the two grounds and the cable.
- Communication satellites could also be among the severely affected systems due to direct exposure to highly charged particles in the storms.
- The scale of impact is different for different regions.
- Chinese cities are more prone to lose connectivity than Indian cities because the former connects to longer cables.
- The U.S. is one of the most vulnerable locations with a high risk of disconnection from Europe during extreme solar events.
- Europe is at a lower risk due to the presence of shorter land and undersea cables interconnecting the continent.

2) B

- CA|TS is globally accepted conservation tool, launched in 2013, that sets best practice and standards to manage tigers and encourages assessments to benchmark progress.
- India's National Tiger Conservation Authority (NTCA) of the Ministry of Environment, Forest and Climate Change announced in 2020 the adoption of CA|TS across all the country's 50 tiger reserves.
- The 50 tiger reserves are spread across 18 states covering an areas of over 72,000 km<sup>2</sup> and contain over 70 per cent of the world's tiger population.
- Only 14 tiger reserves in India has been accredited with the CA|TS tag.
- The 14 tiger reserves are:
  - Manas, Kaziranga and Orang in Assam
  - Satpura, Kanha and Panna in Madhya Pradesh

- Pench in Maharashtra
- Valmiki Tiger Reserve in Bihar
- Dudhwa in Uttar Pradesh
- Sunderbans in West Bengal
- Parambikulam in Kerala
- Bandipur Tiger Reserve in Karnataka
- Mudumalai and Anamalai Tiger Reserves in Tamil Nadu.

**Well-known reserves like Corbett, Ranthambore and Bandhavgarh did not get the tag.**

**3) B**

### **Red-Eared Slider Turtle**

- It is a native of the southern U.S. (Mississippi river) and northern Mexico.
- They live in still and warm water-bodies such as ponds, lakes, streams, and slow-running rivers.
- It is identified as exotic and enlisted in the 100 most invasive species in the world.
- They are considered a major threat to native turtle specials, as they mature fast, grow larger, and produce more offspring, and are very aggressive.
- It has recently been found accidentally from the Malankara dam in Idukki.

**4) C**

### **Inspiration4**

- SpaceX is going to launch 'Inspiration4', the world's 1st all-civilian, non-governmental spaceflight soon.
- This mission will take 4 private citizens into space in the Crew Dragon spacecraft, which will be privately operated by SpaceX.
- This mission involves circling the Earth for 3 days at the height of 575km (low Earth orbit), and then splashing down into the Atlantic Ocean.
- Inspiration4 will orbit the Earth at 575km, higher than the International Space Station (408km) and the Hubble space telescope (547km).
- This will be the farthest distance travelled by a crewed mission since 2009, when astronauts went to repair the Hubble telescope.
- The dome window has been inspired by the Cupola, a module on the International Space Station used to make observations about our planet.

- Significance - The journey will present an opportunity for collecting many health data that will aid in planning future crewed space missions.
- This will help in assessing behavioural and cognitive changes over the journey.
- The travelers will undergo balance and prescription tests just before and after their journey to assess their response to the change in gravity.

## **5) B**

### **Manda Buffalo**

- It is recognised as the 19th native breed of buffaloes in the country by ICAR-National Bureau of Animal Genetic Resources.
- It is seen in the hill ranges of Eastern Ghats and plateau regions of Koraput region of Odisha.
- They are less prone to parasitic infections.
- It can live, produce and reproduce at low or no input system.
- The average milk yield of these buffaloes is 2 to 2.5 litre at a time with more than 8 per cent fat.
- It mature at around three years and drop the first calf at around 4 years.
- Every 1.5 to 2 years they give birth to a calf for the whole life of around 20 years.
- Its germ-plasm was first identified by the fisheries and animal resources development (FARD) department in collaboration with the Odisha university of Agriculture and Technology.
- The recent recognition will lead to the efforts from Central and State government to conserve the breed and enhance its productivity through breeding strategy.

Other recognitions from Odisha –

- 2 buffalo breeds (Chilika and Kalahandi)
- 4 cattle breeds (Binjharपुरi, Motu, Ghumusari and Khariar)
- 1 sheep breed (Kendrapara)

## **6) D**

- In a first-of-its kind in India, a team of researchers have conducted a study to examine the seasonal periodicities of airborne pollen spectrum and developed a pollen calendar for the city, Chandigarh.
- The calendar identifies potential allergy triggers and provides a clear understanding for clinicians as well as allergy sufferers about their causes to help limit their exposure during high pollen loads.

## **Pollen**

- Pollens is released by plants; making millions of people suffer from pollen related allergic ailments.
- They are considered major outdoor airborne allergens responsible for allergic rhinitis, asthma, and atopic dermatitis in humans.
- They are known to be dispersed and transported to thousands of kilometers in the atmosphere.
- About 20-30% of the population suffers from allergic rhinitis/hay fever in India, and approximately 15% develop asthma.
- Pollen allergy is recognized as one of the global health issues by the World Allergy Organization (WAO).
- Pollen distribution greatly depends on meteorological conditions, micro and macro topography of a particular area.

## **Pollen Calendar**

- Pollen calendar represent the time dynamics of airborne pollen taxa in graphical form in a particular geographical area.
- Pollen calendars are location-specific, with concentrations closely related to locally distributed flora.

## **Background**

- As per the Indian State Forest Report 2019 (ISRF), considering the percentage of the geographical area of State/Union Territory (UTs), the UT of Chandigarh has the highest percentage of tree cover, i.e., 22.34%.
- However, an increase in green spaces will also lead to a rise in airborne pollen, consequently increasing pollen-related allergic ailments.

## **7) D**

### **Green Status of Species**

- It was developed in response to Resolution- 041 of World Conservation Congress (WCC) held in 2012.
- In this Resolution, IUCN called for the development of 'Green Lists' of Species, Ecosystems and Protected Areas, in order to measure conservation success in these three areas.

- Since 2012, a Green List of Protected and Conserved Areas has been launched, and the development of the Green Status of Species began under the name 'Green List of Species'.

The Green Status assesses species against 3 essential facets of recovery:

- Range - A species is fully recovered if it is present in all parts of its range, even those that are no longer occupied but were occupied prior to major human impacts/disruption;
- Viability - It is viable (i.e., not threatened with extinction) in all parts of the range;
- Functionality - It is performing its ecological functions in all parts of the range.
- These factors contribute towards a "Green Score" ranging from 0%-100% which shows how far a species is from its "fully recovered" state.
- The IUCN Green Status classifies species into nine Species Recovery Categories, indicating the extent to which species are depleted or recovered compared to their historical population levels.
- Each Green Status assessment measures the impact of past conservation on a species, a species' dependence on continuing support, how much a species stands to gain from conservation action within the next ten years, and the potential for it to recover over the next century.
- The IUCN Red List describes how close a species is to extinction, but is not intended to paint a full picture of its status and functioning within its ecosystem.
- With the IUCN Green Status, it becomes easy to track species recovery and dramatically improve our understanding of the state of the world's wildlife.
- The IUCN Green Status of Species will be integrated into the IUCN Red List of Threatened Species, which will then provide a fuller picture of species' conservation status including both their extinction risk and recovery progress.

## **8) D**

### **Deep Sea Mining**

- It is the process of retrieving mineral deposits from the deep sea – the area of the ocean below 200 m.
- Parts of the ocean floor are rich in minerals, including poly-metallic nodules composed mostly of copper, manganese, cobalt and nickel.
- These are found on sea-beds 4 to 6 km below the surface.

- International Sea Bed Authority is an intergovernmental body established by the Law of the Sea Convention to organize, regulate and control all mineral-related activities in the international seabed area beyond the limits of national jurisdiction.

9) C

#### **Portal for Regulation of Air-pollution in Non-Attainment cities (PRANA)**

- It is a portal for monitoring the implementation of National Clean Air Program (NCAP).
- It will support tracking of physical as well as financial status of city air action plan implementation and disseminate information on air quality management efforts under NCAP to public.

#### **National Clean Air Program (NCAP)**

- It has been launched by the Ministry of Environment, Forest and Climate Change as a comprehensive initiative in partnership with various Ministries and States to improve air quality at city, regional and national level.
- It is a focused and time bound scheme to implement various sectoral policies, strengthen monitoring and enhance public participation in more than 100 cities for effective air quality management.

10) B

11) C

#### **Dugong Conservation Reserve**

- The Dugong, also called the sea cow, is an herbivorous mammal.
- It grazes on sea grasses and comes to surface for breathe.
- It can grow upto 3m long, 300kg weight and live for 65 to 70 years.
- They are found in over 30 countries. In India, it is found in Gulf of Mannar, Gulf of Kutch, Palk Bay, and the Andaman and Nicobar Islands.
- It is listed in Appendix I of CITES and Vulnerable in IUCN Status.
- The Tamil Nadu State government recently announced that a 500-sqkm dugong conservation reserve will soon be set up in the Palk Bay.

12) C

Agricultural landholdings

- 68% of the agricultural landholdings in the country belong to the marginal (less than one hectare) category.
- The share of the marginal category in total agricultural landholding has been increasing over the years from 51% in 1970-71 to 68% in 2015-16.
- The share of operational landholdings cultivated by women has increased from 11.7% in 2005-06 to 13.9% in 2015-16.

**13) B****Breakthrough Infection**

- If a person gets infected with the SARS-CoV-2 virus, 14 days after the second shot of the vaccine, it is called a 'breakthrough infection'.
- The two-week window is the time it takes for the body to produce necessary antibodies following a shot of the vaccine.
- Breakthrough infections are not a surprise.
- In clinical trials, all vaccines available have reported efficacy rates between 70% and 90%.
- This implies that between 10% and 30% of a vaccinated population will be vulnerable to infection.
- Variant of High Consequence – It has clear evidence that prevention measures or medical countermeasures (MCMs) have significantly reduced effectiveness relative to previously circulating variants.

**14) C**

- For the first time, FSSAI is looking at setting standards for the vegan food industry and use of a separate vegan food logo.
- It framed the following guidelines regarding vegan food products.
- Vegan food is defined as foods or ingredients that do not use any ingredients, additives and processing aids of animal origin including milk, fish, poultry, meat, egg or honey-related products.
- It also should not contain materials of insect origin like silk, dyes, chitin/chitosan or ingredients that are clarified using animal sourced products.
- It should not be involved in animal testing for evaluating the safety of the final product or ingredient.
- It should also not contain any animal derived GMO (genetically modified organism) or use animal derived gene for manufacturing these products.
- Traceability shall be established up to the manufacturer level.



- Verification of the final product will need to be done through analytical tools to ascertain absence of animal origin material in the product.

**15) C**

Electrolysers

- The government plans to bring in mandatory 'green hydrogen purchase obligation' for the industry.
- The industries are required to meet 10% of their requirements through domestic green hydrogen.
- In order to meet the demand, it has come up with a production linked incentive (PLI) scheme for investors in Electrolyser manufacturing.
- Electrolyzers are the machines that split water into hydrogen and oxygen.
- They are used to produce green hydrogen using electricity produced from renewable energy sources such as solar and wind plants.

**16) D**

**17) B**

**18) A**

The platform was launched by the National Medicinal Plants Board (NMPB), Ministry of Ayush. The Full Form of the platform is an e-Channel for Herbs, Aromatic, Raw material And Knowledge. It is an online market portal for the trade of medicinal plants.

**19) D**

The scheme aims to enable the textile industry to become globally competitive and boost exports. The scheme also aims to boost employment generation within the textile sector and also attract large investment.

It has been launched by Textile ministry.

**20) B**

