

## Answers

1) D

Zeolites

Zeolites are microporous, three dimensional crystalline solid of aluminium silicate. Zeolites have small openings of fixed size in them which allow small molecules to pass through them easily but larger molecules cannot pass through them; that is why they are sometimes called molecular sieve.

Zeolites are very stable solid under different environmental conditions. The melting point of zeolite is very high, i.e. 1000°C. They are insoluble in water or other inorganic solvents and they do not undergo oxidation in the presence of air.

Since zeolites are not reactive and are obtained from naturally occurring minerals, therefore, they do not have any harmful environmental effects; although skin contact or inhalation may have a carcinogenic effect. Recently DRDO imports zeolite to make oxygen for COVID-hit by using it in an oxygen concentrator to vent out nitrogen and leave oxygen gas for patients.

2) A



3) C

4) A

**Statement 1 is correct:** Constitution Bench of Supreme Court upheld the validity of Sedition Act in Kedarnath Singh vs State of Bihar 1962 case. But Supreme Court stated that persons can be charged with sedition only if there is incitement to violence in his speech or writing or an intention or tendency to create disorder or disturbance in law and order.

**Statement 2 is incorrect:** Sedition charge is valid only against actions that incite violence. that express strong disapproval of 'the measures of the Government, with a view to obtain their desired modifications by lawful means, without exciting or attempting to excite hatred, contempt or disaffection, do not constitute an offense under this section.'

**Statement 3 is incorrect:** This statement was made by Mahatma Gandhi after he was tried under Section 124A of IPC on the charge of "exciting disaffection towards the government established by law in India" because he had written against the colonial rule on Rowlatt Act & Jallianwala Bagh massacre. He said: "Section 124-A under which I am happily charged is perhaps the prince among the political sections of the Indian Penal Code designed to suppress the liberty of the citizen. Affection cannot be manufactured or regulated by law.

5) C

National Commission for Protection of Child Rights (NCPCR) is providing Tele-Counseling to children through SAMVEDNA. Sensitizing Action on Mental Health Vulnerability through Emotional Development and Necessary Acceptance (SAMVEDNA)

It is a Toll-Free Helpline launched to provide psycho-social mental support for Children affected during COVID 19 Pandemic. SAMVEDNA tele counselling service is for psychological support to children to address their stress, anxiety, fear and other issues during the Pandemic.

Tele counseling is provided to the children under three categories:

- Children who are in Quarantine/isolation/COVID Care centers.
- Children who have COVID positive parents or family members and near ones.
- Children who have lost their parents due to Covid-19 Pandemic.

This Toll-free Tele-Counseling cater to the children from all over India in various regional languages. National Commission for Protection of Child Rights (NCPCR)

It is a statutory body established through Commissions for Protection of Child Rights (CPCR) Act, 2005, an Act of Parliament (December 2005). It works under the aegis of Ministry of Women and Child Development, Govt. of India.

**6) C**

Diplomatic Immunity is a privilege provided to diplomats in the country in which they got posted. Generally, these privileges will be in the form of exemption from certain laws and taxes. This may be civil or criminal.

However, it is possible for the diplomat's home country to waive immunity. But this can happen only when the individual has committed a 'serious crime', anything unconnected to their diplomatic role or has witnessed such a crime.

**7) C**

**Deep Shake Earthquake Prediction**

It is an earthquake early warning system that uses artificial intelligence (AI) to predict how the ground will move during a temblor to give several seconds' advance notice that the earthquake is coming. It uses a deep neural network, a type of AI learning, to identify patterns from past earthquakes in order to predict how the shaking from a new quake will travel.

This could lead to faster processing and easier generalizability across different earthquake-prone regions. Despite the fact that Deep Shake was given no information about the earthquake's location or type, it was able to warn of shaking at other seismic stations in the network between 3-13 seconds before it happened

**8) A**

Six sites, including the Ganga ghats in Varanasi, temples of Kancheepuram in Tamil Nadu and the Satpura Tiger Reserve in Madhya Pradesh, have been added to India's tentative list of UNESCO world heritage sites. The other three sites are the Maratha military architecture in Maharashtra, the Hire Bengal megalithic site in Karnataka and Bhedaghat-Lametaghat of Narmada Valley in Madhya Pradesh.

**UNESCO's World Heritage Site List**

**Tentative Lists**

A Tentative List is an inventory of those properties which each State Party intends to consider for nomination to the World Heritage List. States Parties should submit Tentative Lists to the World Heritage Centre, at least one year prior to the submission of any nomination.

Nominations to the World Heritage List will not be considered unless the nominated property has already been included on the State Party's Tentative List.

Once inscribed on the World Heritage List, properties are removed from the Tentative Lists of States Parties.

The Tentative Lists of States Parties are published by the World Heritage Centre at its website to ensure transparency, access to information and to facilitate harmonization of Tentative Lists at regional and thematic levels.

### **World Heritage List Nominations**

Only countries that have signed the World Heritage Convention, pledging to protect their natural and cultural heritage, can submit nomination proposals for properties on their territory to be considered for inclusion in UNESCO's World Heritage List.

To be included on the World Heritage List, sites must be of outstanding universal value and meet at least one out of ten selection criteria. Until the end of 2004, World Heritage sites were selected on the basis of six cultural and four natural criteria. With the adoption of the revised Operational Guidelines, only one set of ten criteria exists.

**9) c**

**10) c**

ICOM is a membership association and a non-governmental organisation which establishes professional and ethical standards for museum activities. It was created in 1946 and is headquartered in Paris, France. It serves as a network of museum professionals (more than 40,000 members in over 138 countries).

The ICOM Red Lists of Cultural Objects at Risk are practical tools to curb the illegal traffic of cultural objects. Red Lists present the categories of cultural objects that can be subjected to theft and traffic. International Museum Day was instituted in 1977 by the International Council of Museums (ICOM).

**11) C**

Dead Sea: It is a salt lake bordered by Jordan to the east and Israel and the West Bank to the west. It lies in the Jordan Rift Valley, and its main tributary is the Jordan River.

**Lake Baikal**

It is a rift lake located in southern Siberia, Russia, between Irkutsk Oblast to the northwest and the Buryat Republic to the southeast. Lake Baikal is the largest freshwater lake by volume in the world, containing 22 to 23% of the world's fresh surface water.

**12) B****Creation of New District**

The power to create new districts or alter or abolish existing districts rests with the State governments. This can either be done through an executive order or by passing a law in the State Assembly.

Many States prefer the executive route by simply issuing a notification in the official gazette. States argue that smaller districts lead to better administration and governance.

The Centre has no role to play in the alteration of districts or creation of new ones. States are free to decide. The Home Ministry comes into the picture when a State wants to change the name of a district or a railway station.

The State government's request is sent to other departments and agencies such as the Ministry of Earth Sciences, Intelligence Bureau, Department of Posts, Geographical Survey of India Sciences and the Railway Ministry seeking clearance. A no-objection certificate may be issued after examining their replies.

**13) D****MLA-LADS**

Members of Legislative Assembly Local Area Development (MLA-LAD) Scheme is the States' version of a central government scheme - Members of Parliament Local Area Development Scheme (MPLAD). The objective of this scheme is to create local need based infrastructure, to create assets of public utility and to remove regional imbalances in development.

This scheme is implemented in rural areas as well as urban areas of a state.

Amounts per MLA varies across the states, Delhi has the highest allocation under MLALAD, and each MLA can recommend works for up to Rs. 10 crore each year. The guidelines for use of MLA-LAD funds differ across states.

After the legislators give the list of developmental works, they are executed by the district authorities as per the government's financial, technical and administrative rules. Recently, Rajasthan Government has approved a proposal to provide Rs. 3 crore each from the MLA Local Area Development (LAD) Fund to mobilise resources for Covid-19 Vaccination of the people in the age group of 18 to 44 years.

#### **14) A**

##### **Pressure Swing Adsorption**

Pressure swing adsorption (PSA) is a technology used to separate some gas species from a mixture of gases under pressure. PSA operates at near-ambient temperatures.

Specific adsorbent materials (e.g., zeolites, activated carbon, molecular sieves, etc.) are used as a trap, preferentially adsorbing the target gas species at high pressure.

A real time example where PSA is applied in an oxygen concentrator, it uses Zeolites to adsorb atmospheric nitrogen and then vents out the nitrogen, this leaves oxygen gas remaining to be used for patients. In high pressure, the surface area of zeolites increases and thus is capable of adsorbing large quantities of nitrogen.

#### **15) A**

##### **Bhedaghat-Lametghat**

Bhedaghat, often referred to as the Grand Canyon of India, is a town in the Jabalpur district. It is known for its marble rocks and their various morphological forms on either side of the Narmada River which flows through the gorge.

It has also been observed that the magical marble mountains assume different colours and even shapes of animals and other living forms as one moves through them. Several dinosaur fossils have been found in the Narmada valley, particularly in Bhedaghat-Lametghat area of Jabalpur. In 1828, the first Dinosaur fossil was collected from Lameta Bed by William Sleeman.

Recently Bhedaghat-Lametghat is added into the UNESCO tentative list of World Heritage Sites.

**16) A**

The objective of the NCRMP is to undertake suitable structural and non-structural measures to mitigate the effects of cyclones in the coastal states and UTs of India.

National Disaster Management Authority (NDMA) under the aegis of Ministry of Home Affairs (MHA) will implement the Project in coordination with participating State Governments and the National Institute for Disaster Management (NIDM).

**17) C**

**18) B**

The Rajasthan government has declared Mucormycosis or black fungus as an epidemic and a notifiable disease.

Mucormycosis or Black Fungus is a rare fungal infection. A group of molds called mucormycetes is the reason behind it, which is abundant in the environment. Transmission: It occurs through inhalation, inoculation, or ingestion of fungal spores from the environment. However, it does not spread between people or between people and animals. Symptoms: Mucormycosis can affect different parts of the body, with different sets of symptoms. Some common symptoms are face numbness, nose obstructions on one side, swelling in the eyes, or pain.

**19) C**

**20) B**

A geographical indication is a public property belonging to the producers of the concerned goods.

Under Articles 1 (2) and 10 of the Paris Convention for the Protection of Industrial Property, geographical indications are covered as an element of IPRs. They are also covered under Articles 22 to 24 of the Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement