

SCIENCE AND TECHNOLOGY

1. Match the followings

- | | |
|--------------|--------------------------------|
| A. Vacuoles | 1. Storage |
| B. Cytoplasm | 2. Movement |
| C. Flagella | 3. Fluid that holds organelles |
| D. Ribosome | 4. Makes protein |

A B C D

- a) 1 2 3 4
b) 1 3 2 4
 c) 3 4 1 2
 d) 4 1 3 2

2. Consider the following statements with regards to DNA replication

1. DNA replication is the process by which DNA makes a copy of itself during cell division
2. In DNA replication enzyme helicase helps in the process of separating two DNA strands.

Choose the correct statement/s using the codes given below

- a) 1 only
 b) 2 only
c) Both 1 and 2
 d) Neither 1 nor 2

3. Which of the following statement/s is/are not correct regarding IndiGen Project- Genome India Project

1. It is a project to carry out whole-genome sequencing of Indian.
2. The Genome Sequencing will be a combined initiative of Ministry of Health and Family Welfare, Department of Health Research, Department of Biotechnology

- a) 1 only
 b) 2 only
 c) Both 1 and 2
d) Neither 1 nor 2

4. Consider the following statements regarding mRNA vaccines:

1. They trick the body into producing some of the viral proteins themselves.
2. They are highly efficacious and are fully synthetic.
3. They use the live virus that causes COVID-19.

Which of the statements given above are correct?

- a) 1, 2 and 3
b) 1 and 2 only
 c) 2 and 3 only
 d) 1 and 3 only

5. Which of the following is/are the byproducts of photosynthesis?

1. Oxygen
2. Carbon dioxide
3. Water

Select the correct answer using the code given below:

- a) 1 only**
 b) 2 and 3 only

- c) 1 and 2 only
- d) 1, 2 and 3

6. Which of the following are potential application areas for "Gold Nano Particles"?

- 1. Electronics
- 2. Photodynamic Therapy
- 3. Therapeutic Agent Delivery
- 4. Sensors
- 5. Diagnostics

Select the correct answer using the code given below:

- a) 1, 3 and 4 only
- b) 2, 3 and 5 only
- c) 1 and 4 only
- d) 1, 2, 3, 4 and 5**

7. Which of the following statements is/are correct with reference to MXene?

- 1. They belong to the class of three-dimensional inorganic compounds.
- 2. They are heat resistant which makes them an excellent solid lubricant.

Select the correct answer using the code given below:

- a) 1 only
- b) 2 only**
- c) Both 1 and 2
- d) Neither 1 nor 2

8. With reference to dry ice, consider the following

- 1. Dry ice is solidified Hydrogen.
- 2. Dry ice is much colder than regular ice and can burn the skin similar to frostbite.
- 3. It is used to prevent insect activity in closed containers of grains and grain products.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 and 3 only**
- c) 1 only
- d) 1, 2 and 3

9. Consider the following statements about the T cells:

- 1. The T cells are a part of the immune system that focuses on specific foreign articles.
- 2. The T cells originate in the bone marrow.
- 3. The most common context of the T cells is within infectious diseases.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 and 3 only
- c) 1 and 2 only
- d) 1, 2 and 3**

10. Algae can be used as

- 1. Food
- 2. Biofuel
- 3. Manure
- 4. Pharmaceutical Ingredient

Which of the items given above is/are correct?

- a) 1 and 3 only
- b) 1, 2 and 3 only
- c) 2, 3 and 4 only

d) All of the above

ENVIRONMENT

11. Which of the following statements best describes “Carbon Fertilization”?

- a) **Increase plant growth due to increase concentration of carbon dioxide in the atmosphere**
- b) Increase temperature of Earth due to increased concentration of CO₂ in the atmosphere
- c) Increase acidity of oceans as a result of increased concentration CO₂ in the atmosphere.
- d) Adaption of all living beings on Earth to the climate change brought about by increased concentration of CO₂ in atmosphere

12. Consider the following statements

- 1. Carbon sinks are those which does not release carbon
- 2. Carbon source are those which does not absorb carbon

Select the correct statement using the codes given below

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) **Neither 1 nor 2**

13. In the context of which of the following do some scientists suggest the use of cirrus cloud thinning technique and the injection of sulphate aerosol into atmosphere?

- a) Creating the artificial rains in some regions
- b) Reducing the frequency and intensity of tropical cyclones
- c) Reducing the adverse effects of solar wind on the Earth
- d) **Reducing the global warming**

14. With reference to “Agenda 21” consider the following statements

- 1. It is a global action plan for sustainable development
- 2. It organised in world Summit on sustainable development held in Johannesburg in 2002

Which of the above statements given above is/are correct ?

- a) **1 only**
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

15. Bio Carbon fund initiative for sustainable forest Landscape is managed by

- a) Asian Development Bank
- b) IMF
- c) UNEP
- d) **World Bank**

16. Which among the following measures can be applied to control Vehicular Air Pollution?

- 1. Use of leaded gasoline
- 2. Reduce Sulphur content in petrol and diesel
- 3. Discourage the use of catalytic converters in vehicles
- 4. Use of methanol-blended petrol

Select the correct answer using the code given below:

- a) 1 and 3 only
- b) **2 and 4 only**
- c) 2 and 3 only
- d) 1, 2, 3 and 4

17. With reference to radioactive pollution, consider the following statements:

1. Radioactive pollution is caused only due to anthropological activities and thus is observed only on Earth.
2. A radioactive pollutant with a longer half-life will significantly impact human health than the one with a shorter half-life.
3. Cobalt, Calcium and Iodine have radioactive isotopes that cause radioactive pollution and environmental degradation.

Which of the statements given above is/are correct?

- a) 3 only**
 b) 1 and 2 only
 c) 2 and 3 only
 d) 1 and 3 only

18. 'Algal bloom' is the consequence of which of the following process?

- a) Blocking of sunlight from reaching other organisms in an aquatic ecosystem.
- b) Deterioration of nitrogen and phosphorus levels in an aquatic ecosystem.
- c) Depletion of oxygen levels in the water.
- d) Excessive Addition of nitrogen or phosphorus from fertilizer runoff, entering the aquatic system.**

19. Consider the following statements with reference to Ozone and its depletion:

1. Polar stratospheric clouds play an important role in the formation of the Ozone layer over Antarctica.
2. UNFCCC primarily deals with ozone depletion issues, and the Montreal Protocol deals with issues of Green House gases.
3. Tropospheric ozone is good for humans, whereas stratospheric ozone is harmful.

Which of the statements given above are correct?

- a) 1 and 2 only
 b) 2 and 3 only
 c) 1, 2 and 3
d) None of the above

20. Consider the following statements with reference to the process of phytoremediation.

1. It is a process to reduce the effects of contaminants in the environment.
2. It is a low cost, solar energy driven clean-up technique.
3. It can be used in case of oil spills only.

Which of the statements given above is/are correct?

- a) 1, 2 and 3
 b) 1 and 3 only
 c) 2 only
d) 1 and 2 only

CURRENT AFFAIRS

1. Consider the following statements:

1. The Antarctica Treaty was signed in 1959, while came into force in 1962.
2. India is a member of this treaty.
3. It is a legally binding treaty.

Which of the statements given above is/ are correct?

- (a) 1 only
(b) 2 and 3 only
 (c) 1 and 3 only
 (d) All of the above

2. With reference to India's 2+2 dialogue, which of the following statements is/are correct?

1. It is a format of dialogue where the **defence/foreign ministers or secretaries** meet with their

- counterparts from another country.
2. India has 2+2 dialogues with four key strategic partners: **the US, Australia, Japan, and Russia.**
- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2
3. India was elected to the UN ECOSOC for the term 2022-24. Consider following statements regarding ECOSOC:
1. It was established by UN Charter in 1946.
2. It is one of the six principal organs of the UN System.
- Choose the incorrect statement(s)
- (a) 1 only**
(b) 2 only
(c) Both 1 and 2
(d) None of the above
4. Recently which country issues "India Out" campaign?
- (a) Maldives**
(b) Myanmar
(c) Nepal
(d) China
5. The World No Tobacco Day is celebrated every year on 31st May. Consider following statements regarding it:
1. The WHO member countries decided to observe it.
2. The theme for this year is "Protect the Environment".
- Select the correct answer using the code given below:
- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) None of the above

