

1. Consider the following statements:
  1. The sudden and unpredictable change in the species composition of a given area is called ecological succession.
  2. The entire sequence of communities that successively change in a given area are called seral communities.
 Which of the statements given above is/are NOT CORRECT?
  - a) 1 only
  - b) 2 only
  - c) Both 1 and 2**
  - d) Neither 1 nor 2
2. Consider the following statements:
  1. Before a biotic community of diverse organisms can become established, there must be soil.
  2. Primary succession begins in areas where natural biotic communities have been destroyed.
 Which of the statements given above is/are correct?
  - a) 1 only**
  - b) 2 only
  - c) Both 1 and 2
  - d) Neither 1 nor 2
3. Consider the following statements:
  1. The species that invade a bare area are called pioneer species.
  2. The climax community remains stable as long as the environment remains unchanged.
 Which of the statements given above is/are correct?
  - a) 1 only
  - b) 2 only
  - c) Both 1 and 2**
  - d) Neither 1 nor 2
4. Consider the following statements:
  1. Nitrifying bacteria change the ammonia in the soil to nitrates and then into nitrites.
  2. Nitrogen oxides dissolve in rain forming nitrates.
 Which of the statements given above is/are NOT CORRECT?
  - a) 1 only**
  - b) 2 only
  - c) Both 1 and 2
  - d) Neither 1 nor 2
5. Consider the following statements:
  1. Oceans stores significantly higher amounts of Carbon as compared to atmosphere.
  2. Decomposers also contribute substantially to CO<sub>2</sub> pool by their processing of waste materials.
 Which of the statements given above is/are correct?
  - a) 1 only
  - b) 2 only
  - c) Both 1 and 2**
  - d) Neither 1 nor 2
6. Consider the following statements:
  1. The flow of energy from producer to top consumers is called energy flow which is bidirectional.
  2. The pyramid of energy is always upward, with a large energy base at the bottom.
  3. Biomass pyramid concept helps to explain the phenomenon of biological magnification.
 Which of the above statements is/are correct?
  - a) 2 only**
  - b) 1 and 2 only
  - c) 1 and 3 only
  - d) 3 only
7. Biomagnification refers to the tendency of pollutants to concentrate as they move from one trophic level to the next.  
Consider the following statements.
  1. In biomagnification there is an increase in concentration of a pollutant from one link in a food chain to another.

2. In order for biomagnification to occur, the pollutant must be long-lived, mobile, soluble in water and biologically inactive.

Which of the above statements is/are correct?

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

8. With reference to food chains in ecosystems, consider the following statements:

- 1. A food chain illustrates the order in which a chain of organisms feed upon each other.
- 2. A food chain illustrates the numbers of each organism which are eaten by others.

Which of the statements given above is / are correct?

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

9. Which of the statements given below is/are correct regarding phosphorus cycle?

- 1. Rocks are the major reservoir of phosphorus which contains phosphorus in the form of phosphates.
- 2. Animals obtain phosphorus indirectly through plants.
- 3. There is no respiratory release of phosphorus in atmosphere.

Select the correct answer from the code given below:

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

10. The benefits that people obtain from ecosystems are termed as ecosystem services. Which of the following is/are the types of Ecosystem services?

- 1. Provisioning services
- 2. Regulating services
- 3. Habitat services
- 4. Cultural services

Select the correct answer from the code given below:

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

11. Consider the following statements

- 1. ASTRA is a Beyond Visual Range (BVR) class of Surface-to-Air Missile system.
- 2. ASTRA is designed to engage and destroy highly manoeuvring supersonic aircraft.

Which of the statements given above is/are NOT correct?

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

12. Consider the following statements:

- 1. The Pinaka is an Artillery Missile System capable of striking into enemy territory up to a range of 75 kilometres.
- 2. The Navigation system of the Pinaka missile is also aided by the Indian Regional Navigation Satellite System (IRNSS).

Which of the statements given above is/are correct?

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

13. Consider the following statements:

- 1. Operation Sankalp was launched to provide assistance to the affected population of Madagascar due to Cyclone Diane.

2. SAMPRITI-IX is a joint military training exercise between India and Nepal.
3. Exercise Mitra Shakti- VII is a joint training exercise between the Indian Army and Sri Lankan Army.

Which of the statements given above is/are correct?

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

14. Consider the following statements:

1. QRSAM (Quick Reaction Surface to Air Missile) is a two stage liquid propelled missile.
2. QRSAM system is developed by HAL. (Hindustan Aeronautics Limited)

Which of the statements given above is/are NOT correct?

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

15. The term HFHSD – IN 512 recently seen in news is related to

- a) Fuel**
- b) Surface Ship
- c) Aircraft
- d) Submarine

16. Consider the following statements Geosynchronous Orbit:

1. A spacecraft in Geosynchronous Orbit appears to remain above Earth at a constant longitude.
2. Geosynchronous Orbit can be considered as a specific case of Geostationary Orbit.

Which of the statements given above is/are correct?

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

17. Consider the following statements regarding:

1. Low Earth Orbit is relatively close to Earth Surface at an altitude of 15km-60km (above Earth Surface).
2. International Space Station orbits around the Earth in the Low Earth Orbit.

Which of the statements given above is/are correct?

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

18. Consider the following statements:

1. Satellites in polar orbits usually travel past Earth from north to south rather than from west to east.
2. Satellites in Sun-synchronous orbit are synchronised to be in the same fixed position relative to the Sun.

Which of the statements given above is/are NOT CORRECT?

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

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

20. Consider the following statements:
1. Eccentricity is a measure of how circular or elliptical an orbit is.
  2. Inclination is the angular distance of the orbital plane from the plane of the planet's equator.
- Which of the statements given above is/are correct?
- a) 1 only
  - b) 2 only
  - c) Both 1 and 2**
  - d) Neither 1 nor 2
21. Which of these discoveries is a landmark evidence of Big Bang theory?
- a) Quasars
  - b) The first exoplanet 51 Pegasi b
  - c) Cosmic Microwave Background Radiation**
  - d) Supernova
22. With reference to neutrinos, Consider the following statements:
1. There are two types of neutrinos, electron neutron and proton neutrino.
  2. Natural neutrinos are harmful as they generate radiation and can cause diseases.
  3. Neutrinos come from the sun (solar neutrinos) and other stars, cosmic rays that come from beyond the solar system, and from the Big Bang.
- Which of the statements given above is/are correct?
- a) 1 only
  - b) 1 and 3 only
  - c) 2 and 3 only
  - d) 3 only**
23. Which of the following statements is/are correct with reference to the Black holes:
1. A black hole is a place in space where gravity pulls so much that even light cannot get out.
  2. Density of black hole is neither very low nor very high.
  3. Stellar black holes are made when the center of a very big star falls in upon itself, or collapses.
- Select the correct answer using the code given below:
- a) 1 only
  - b) 2 and 3 only
  - c) 1 and 3 only**
  - d) 1, 2 and 3
24. With reference to Gravitational Waves, Consider the following statements:
1. Gravitational waves can be produced by Humans, Cars and Aeroplanes.
  2. The strongest gravitational waves are produced by catastrophic events such as colliding black holes, the collapse of supernovae and the remnants of gravitational radiation created by the birth of the Universe itself.
- Which of the statements given above is/are NOT CORRECT?
- a) 1 only
  - b) 2 only
  - c) Both 1 and 2
  - d) Neither 1 nor 2**
25. Consider the following statements with reference to India's solar mission Aditya-L1:
1. Aditya L1 is the first satellite to study the magnetic field of the sun's corona.
  2. Aditya L1 will help to study that why the photosphere, the deeper layer of the sun is at much lower temperature than the corona.
- Which of the statements given above is/are correct?
- a) 1 only
  - b) 2 only
  - c) Both 1 and 2**
  - d) Neither 1 nor 2