

Assertion and Reason Questions

1. **Assertion:** Pathogens are harmful to mankind.
Reason: They either kill or prevent the growth of microorganisms.
2. **Assertion:** Use of fertilizers greatly enhances crop productivity.
Reason: Irrigation is very important in increasing crop productivity.
3. **Assertion:** Combustion is not a self-sustaining process.
Reason: Combustion starts only when a substance reaches its ignition temperature.
4. **Assertion:** Petrol, diesel, lubricating oil, and wax are separated from crude petroleum oil by refining.
Reason: During refining, petrol, diesel, lubricating oil, and wax are separated based on their boiling points.
5. **Assertion:** A boat moving at a higher speed experiences more fluid friction.
Reason: Boats have a streamlined shape which reduces fluid friction.
6. **Assertion:** The irrigation system helps in efficient water management for crop production.
Reason: Different types of irrigation methods are designed to minimize water wastage.
7. **Assertion:** Microorganisms play a significant role in soil fertility.
Reason: They decompose organic matter and help in the nutrient cycle.
8. **Assertion:** Atmospheric pressure decreases with an increase in altitude.
Reason: The density of air decreases with height, leading to lower atmospheric pressure.
9. **Assertion:** Streamlined vehicles are designed to minimize air resistance.
Reason: A streamlined shape reduces the drag force acting on the vehicle, improving fuel efficiency.
Correct Option: (d)
10. **Assertion:** Good microorganisms are used in the production of antibiotics.

Reason: Certain microorganisms produce antibiotics that can kill or inhibit the growth of harmful bacteria.

11. **Assertion:** Overuse of chemical fertilizers can lead to soil degradation.
Reason: Excessive use of fertilizers can disrupt the natural balance of soil nutrients.
12. **Assertion:** The greenhouse effect is mainly caused by human activities.
Reason: Greenhouse gases released from industrial processes contribute to global warming.
13. **Assertion:** Friction is always a hindrance in mechanical systems.
Reason: Friction can cause wear and tear on machinery.
14. **Assertion:** Good friction is necessary for walking safely.
Reason: Friction provides the grip needed to prevent slipping.
15. **Assertion:** The process of deforestation has significant environmental impacts.
Reason: Deforestation leads to loss of biodiversity and disruption of ecosystems.
Correct Option: (b)
16. **Assertion:** Coal is formed from the remains of ancient plants.
Reason: Coal formation involves high pressure and temperature over millions of years.
17. **Assertion:** Liquid pressure is independent of the shape of the container.
Reason: Liquid pressure depends on the height of the liquid column and the density of the liquid.
18. **Assertion:** Combustion requires the presence of a fuel, oxygen, and an ignition source.
Reason: The three elements together sustain the combustion process.
19. **Assertion:** Deforestation can contribute to climate change.
Reason: Trees absorb carbon dioxide, and their removal increases atmospheric CO₂ levels.

- 20. Assertion:** Different conservation areas include national parks, wildlife sanctuaries, and biosphere reserves.
Reason: Each type of conservation area serves a different purpose in protecting various aspects of biodiversity.
- 21. Assertion:** The use of renewable resources is crucial for sustainable development.
Reason: Renewable resources can be replenished naturally and reduce environmental impact.
- 22. Assertion:** Canning is an effective method for food preservation.
Reason: Canning eliminates microorganisms by heating the food in sealed containers.
- 23. Assertion:** Bad friction can be reduced by applying lubricants.
Reason: Lubricants decrease the friction between surfaces in contact.
- 24. Assertion:** The boiling point of a liquid is not affected by atmospheric pressure.
Reason: Atmospheric pressure affects the boiling point of a liquid.
- 25. Assertion:** Good friction is essential for the operation of brakes in vehicles.
Reason: Brakes rely on friction to slow down or stop the vehicle.
- 26. Assertion:** The formation of petroleum involves the remains of ancient marine organisms.
Reason: Petroleum forms from the remains of microorganisms buried under layers of sediment.
- 27. Assertion:** Some microorganisms are used in the process of fermentation.
Reason: Fermentation involves the metabolic activity of microorganisms to produce alcohol or acids.
- 28. Assertion:** The use of pesticides can improve crop yield.
Reason: Pesticides control pests and diseases that affect crops.
- 29. Assertion:** Friction between surfaces is caused by their irregularities.
Reason: These irregularities lead to resistance against motion.

- 30. Assertion:** The process of making biodiesel involves the use of microorganisms.
Reason: Microorganisms help in the breakdown of fats into biodiesel.
- 31. Assertion:** Renewable resources include solar and wind energy.
Reason: These resources can be naturally replenished.
- 32. Assertion:** The frictional force is always opposite to the direction of motion.
Reason: This opposition is what slows down or stops the motion.
- 33. Assertion:** A mixture of air and fuel is required for combustion.
Reason: This mixture ignites to produce heat and light.