Life Processes

Assertion & Reason Type Questions

Directions: Each of the following questions consists of two statements, one is Assertion (A) and the other is Reason (R). Give answer:

a. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

b. Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

c. Assertion (A) is true but Reason (R) is false.

d. Assertion (A) is false but Reason (R) is true.

Q1. Assertion (A): Leaves are the main site of photosynthesis.

Reason (R): Chloroplast are present in leaves.

Answer : (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

Q2. Assertion (A): The inner walls of the small intestine have finger like projections called villi which are rich in blood.

Reason (R): These villi have a large surface area to help the small intestine in completing the digestion of food. **(CBSE 2023)**

Answer : (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

Q3. Assertion (A): Herbivores have longer small intestine than carnivores.

Reason (R): Carnivores can digest cellulose due to the presence of enzyme, cellulase.

Answer : (c) Reason is false because carnivores cannot digest cellulose.

Q4. Assertion (A): Energy is used during the process of respiration.

Reason (R): Respiration stores energy in the form of ATP.

Answer : (d) Assertion is false because energy is released during cellular respiration.

Q5. Assertion (A): Amphibians can tolerate mixing of oxygenated and deoxygenated blood.

Reason (R): Amphibians are animals with two chambered heart. **(CBSE SQP 2022-23)**

Answer : (c) Reason is false because amphibians have three- chambered hearts.

Q6. Assertion (A): Nitrogen is an essential element for plant growth and is taken up by plants in the form of inorganic nitrates or nitrites.

Reason (R): The soil is the nearest and richest source of raw materials like nitrogen, phosphorus and other minerals for the plants.

Answer : (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

Q7. Assertion (A): In humans, major amount of water is absorbed by tubular part of nephron.

Reason (R): The amount of water reabsorbed depends on how much dissolved waste is to be excreted from the body.

Answer : (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

Q8. Assertion (A): Resins and gums are stored in old xylem tissue in plants.

Reason (R): Resins and gums facilitate transport of water molecules.

Answer : (c) Reason is false because resins and gums are waste products and do not facilitate the transport of water molecules.

Q9. Assertion (A) : Plants lack excretory organs.

Reason (R) : Plants usually absorb essential nutrients.

Answer : (b)

Q10. Assertion (A) : In anaerobic respiration, one of the end product is alcohol.

Reason (R) : There is an incomplete breakdown of glucose.

Answer : (a)

Q11. Assertion (A) : In plants there is no need of specialised respiratory organs.

Reason (R) : Plants do not have great demands of gaseous exchange.

Answer : (a)

Q12. Assertion (A) : Bile is essential for digestion of lipids.

Reason (R) : Bile juice contains enzymes.

Answer : (c)

Q13. Assertion (A) : Carbohydrate digestion mainly takes place in small intestine.

Reason (R) : Pancreatic juice contains the enzyme lactase.

Answer : (c)

Q14. Assertion (A) : Aerobic respiration requires less energy as compared to anaerobic respiration.

Reason (R) : Mitochondria is the powerhouse of the cell.

Answer : (d)

Q15. Assertion (A): Arteries are thick-walled and elastic in nature.

Reason (R) : Arteries have to transport blood away from the heart.

Answer : (b)

Q16. Assertion (A) : Human heart is four-chambered.

Reason (R) : Vena cava is the only artery that supplies deoxygenated blood to the heart.

Answer : (c)

Q17. Assertion (A): Energy is required to carry out different life processes.

Reason (R) : Energy is obtained in the form of ATP in the mitochondria.

Answer : (a)

Q18. Assertion (A): Rings of cartilage are present in the throat,

Reason (R) : These ensure that the air-passage does not collapse

Answer : (a)

Q19. Assertion (A): Pyruvate is a six-carbon molecule

Reason (R) : It is prepared in the cytoplasm as the first step to cellular respiration

Answer : (d)

Q20. Assertion (A): Molecular movements are needed for life.

Reason (R): Body structures made up of these molecules need continuous repair and maintenance

Answer : (a)

Q21. Assertion (A): Diffusion does not meet high energy requirements of multi-cellular organisms

Reason (R) : Diffusion is a fast process but occurs at the surface of the body.

Answer : (c)

Q22. Assertion (A): The opening and closing of the pore is a function of the guard cells.

Reason (R) : Stomatal pores are the site for exchange of gases by diffusion.

Answer : (b)

Q23. Assertion (A): The purpose of making urine is to filter out undigested food from intestine

Reason (R): Kidneys filter the waste and produce urine,

Answer : (d)

Q24. Assertion (A): The inner lining of the small intestine has numerous finger-like projections called villi.

Reason (R) : The villi increase the surface area for absorption.

Answer : (a)

Q25. **Assertion (A):** In human beings, the respiratory pigment is haemoglobin

Reason (R) : It is a type of protein which has high-affinity carbon dioxide.

Answer : (c)

Q26. Assertion (A): The plants store some of the waste products in their body parts.

Reason (R) : Raphides are the solid waste products of plants.

Answer : (b)

Q27. Assertion (A): The movement of water and dissolved salts in xylem is always upwards.

Reason (R) : 'The upward movement of water is due to low pressure created by transpiration.

Answer : (a)

Q28. Assertion (A): Photosynthesis takes place in green parts of the plants.

Reason (R) : Photosynthesis always takes place in leaves.

Answer : (c)

Q29. Assertion: The average number of heart beat of a person at rest is about 80 per minute.

Reason (R) : One contraction and relaxation of the heart constitutes a complete heart beat.

Answer : (d)

Q30. Assertion (A): Ureters are the tubes which carry urine from kidneys to the bladder.

Reason (R) : Urine is stored in the urethra.

Answer : (c)

Q31. Assertion (A): Ventricles have thicker walls than auricles.

Reason (R) : Ventricles have to pump blood into various organs with great pressure

Answer : (a)

Q32. Assertion (A): Capillaries are the thinnest blood vessels.

Reason (R) : Capillaries connect the branches of arteries and veins.

Answer : (b)

Q33. Assertion (A): Blood takes up oxygen from the alveolar air and release CO_2 during exchange.

Reason (R) : 'The concentration of O, is more in alveolar air.

Answer : (b)

Q34. Assertion: The large intestine is the largest part of the alimentary canal.

Reason (R) : Tiger has a shorter small intestine, than herbivores.

Answer : (d)

Q35. Assertion (A): Most of the living organisms carry out aerobic respiration.

Reason (R) : Mitochondria is the site of aerobic respiration in the cell.

Answer : (b)

Q36. Assertion (A): The Bowman's capsule and the tubule together make a nephron.

Reason (R) : The function of tubule is to allow the selective reabsorption of substances like glucose, amino acids, urea, salts and water into the blood capillaries.

Answer : (c)

Q37. Assertion (A): Pancreatic juice digests starch, proteins and fats.

Reason (R) : Pancreatic juice contains digestive enzymes like pancreatic amylase, trypsin and lipase.

Answer : (a)

Q38. Assertion (A): The accumulation of lactic acid in the muscles causes muscle cramps.

Reason (R) : During vigorous physical exercise leg muscles respire anaerobically.

Answer : (a)

Q39. Assertion (A): Phloem helps in translocation of food from the leaves.

Reason (R) : Phloem provides mechanical support to plant.

Answer : (c)

Q40. Assertion (A): Trachea does not collapse, when there is no air in it.

Reason : Trachea is supported by cartilage.-x-x-x-

Answer : (a)