

CHAPTER 6
Life Processes

Multiple Choice Questions

1. Which of the following statements about the autotrophs is incorrect?
(a) They synthesise carbohydrates from carbon dioxide and water in the presence of sunlight and chlorophyll
(b) They store carbohydrates in the form of starch
(c) They convert carbon dioxide and water into carbohydrates in the absence of sunlight
(d) They constitute the first trophic level in food chains

2. In which of the following groups of organisms, food material is broken down outside the body and absorbed?
(a) Mushroom, green plants, *Amoeba*
(b) Yeast, mushroom, bread mould
(c) *Paramecium*, *Amoeba*, Cuscuta
(d) Cuscuta, lice, tapeworm

3. Select the correct statement
(a) Heterotrophs do not synthesise their own food
(b) Heterotrophs utilise solar energy for photosynthesis
(c) Heterotrophs synthesise their own food
(d) Heterotrophs are capable of converting carbon dioxide and water into carbohydrates

4. Which is the correct sequence of parts in human alimentary canal?
(a) Mouth → stomach → small intestine → oesophagus → large intestine
(b) Mouth →oesophagus → stomach → large intestine → small intestine
(c) Mouth → stomach → oesophagus → small intestine → large intestine
(d) Mouth → oesophagus → stomach → small intestine → large intestine

5. If salivary amylase is lacking in the saliva, which of the following events in the mouth cavity will be affected?

(a) Proteins breaking down into amino acids
(b) Starch breaking down into sugars
(c) Fats breaking down into fatty acids and glycerol
(d) Absorption of vitamins

6. The inner lining of stomach is protected by one of the following from hydrochloric acid. Choose the correct one

(a) Pepsin
(b) Mucus
(c) Salivary amylase
(d) Bile

7. Which part of alimentary canal receives bile from the liver?

(a) Stomach
(b) Small intestine
(c) Large intestine
(d) Oesophagus

8. A few drops of iodine solution were added to rice water. The solution turned blue-black in colour. This indicates that rice water contains

(a) complex proteins
(b) simple proteins
(c) fats
(d) starch

9. In which part of the alimentary canal food is finally digested?

(a) Stomach
(b) Mouth cavity
(c) Large intestine
(d) Small intestine

10. Choose the function of the pancreatic juice from the following

(a) trypsin digests proteins and lipase carbohydrates
(b) trypsin digests emulsified fats and lipase proteins
(c) trypsin and lipase digest fats
(d) trypsin digests proteins and lipase emulsified fats

11. When air is blown from mouth into a test-tube containing lime water, the lime water turned milky due to the presence of

(a) oxygen
(b) carbon dioxide
(c) nitrogen
(d) water vapour

12. The correct sequence of anaerobic reactions in yeast is

(a) Glucose $\xrightarrow{\text{cytoplasm}}$ Pyruvate $\xrightarrow{\text{mitochondria}}$ Ethanol + Carbondioxide

(b) Glucose $\xrightarrow{\text{cytoplasm}}$ Pyruvate $\xrightarrow{\text{cytoplasm}}$ Lactic acid

(c) Glucose $\xrightarrow{\text{cytoplasm}}$ Pyruvate $\xrightarrow{\text{mitochondria}}$ Lactic acid

(d) Glucose $\xrightarrow{\text{cytoplasm}}$ Pyruvate $\xrightarrow{\text{cytoplasm}}$ Ethanol + Carbondioxide

13. Which of the following is most appropriate for aerobic respiration?

(a) Glucose $\xrightarrow{\text{mitochondria}}$ Pyruvate $\xrightarrow{\text{cytoplasm}}$ CO_2+H_2O+ Energy

(b) Glucose $\xrightarrow{\text{cytoplasm}}$ Pyruvate $\xrightarrow{\text{mitochondria}}$ CO_2+H_2O+ Energy

(c) Glucose $\xrightarrow{\text{cytoplasm}}$ Pyruvate + Energy $\xrightarrow{\text{mitochondria}}$ CO_2+H_2O

(d) Glucose $\xrightarrow{\text{cytoplasm}}$ Pyruvate + Energy $\xrightarrow{\text{mitochondria}}$ CO_2+H_2O+ Energy

14. Which of the following statement(s) is (are) true about respiration?

(i) During inhalation, ribs move inward and diaphragm is raised

(ii) In the alveoli, exchange of gases takes place i.e., oxygen from alveolar air diffuses into blood and carbon dioxide from blood into alveolar air

(iii) Haemoglobin has greater affinity for carbon dioxide than oxygen

(iv) Alveoli increase surface area for exchange of gases

(a) (i) and (iv) (b) (ii) and (iii)

(c) (i) and (iii) (d) (ii) and (iv)

15. Which is the correct sequence of air passage during inhalation?

(a) Nostrils → larynx → pharynx → trachea → lungs

(b) Nasal passage → trachea → pharynx → larynx → alveoli

(c) larynx → nostrils → pharynx → lungs

(d) Nostrils → pharynx → larynx → trachea → alveoli

16. During respiration exchange of gases take place in

(a) trachea and larynx

(b) alveoli of lungs

(c) alveoli and throat

(d) throat and larynx

17. Which of the following statement (s) is (are) true about heart?

(i) Left atrium receives oxygenated blood from different parts of body while right atrium receives deoxygenated blood from lungs

(ii) Left ventricle pumps oxygenated blood to different body parts while right ventricle pumps deoxygenated blood to lungs

(iii) Left atrium transfers oxygenated blood to right ventricle which sends it to different body parts

(iv) Right atrium receives deoxygenated blood from different parts of the body while left ventricle pumps oxygenated blood to different parts of the body

(a) (i) (b) (ii)

(c) (ii) and (iv) (d) (i) and (iii)

18. What prevents backflow of blood inside the heart during contraction?

(a) Valves in heart

(b) Thick muscular walls of ventricles

(c) Thin walls of atria

(d) All of the above

19. Single circulation i.e., blood flows through the heart only once during one cycle of passage through the body, is exhibited by

(a) Labeo, Chameleon, Salamander

(b) Hippocampus, Exocoetus, Anabas

(c) Hyla, Rana, Draco

(d) Whale, Dolphin, Turtle

20. In which of the following vertebrate group/groups, heart does not pump oxygenated blood to different parts of the body?

(a) Pisces and amphibians

(b) Amphibians and reptiles

(c) Amphibians only

(d) Pisces only

21. Choose the correct statement that describes arteries.

(a) They have thick elastic walls, blood flows under high pressure; collect blood from different organs and bring it back to the heart

(b) They have thin walls with valves inside, blood flows under low pressure and carry blood away from the heart to various organs of the body

(c) They have thick elastic walls, blood flows under low pressure; carry blood from the heart to various organs of the body

(d) They have thick elastic walls without valves inside, blood flows under high pressure and carry blood away from the heart to different parts of the body.

22. The filtration units of kidneys are called

(a) ureter
(b) urethra
(c) neurons
(d) nephrons

23. Oxygen liberated during photosynthesis comes from

(a) water
(b) chlorophyll
(c) carbon dioxide
(d) glucose

24. The blood leaving the tissues becomes richer in

(a) carbon dioxide
(b) water
(c) heamoglobin
(d) oxygen

25. Which of the following is an incorrect statement?

(a) Organisms grow with time
(b) Organisms must repair and maintain their structure
(c) Movement of molecules does not take place among cells
(d) Energy is essential for life processes

26. The internal (cellular) energy reserve in autotrophs is

(a) glycogen
(b) protein
(c) starch
(d) fatty acid

27. Which of the following equations is the summary of photosynthesis?

(a) $6CO_2 + 12H_2O \rightarrow C_6H_{12}O_6 + 6O_2 + 6H_2O$

(b) $6CO_2 + H_2O$ + Sunlight $\rightarrow C_6H_{12}O_6 + O_2 + 6H_2O$

(c) $6CO_2 + 12H_2O$ + Chlorophyll + Sunlight $\rightarrow C_6H_{12}O_6 + 6O_2 + 6H_2O$

(d) $6CO_2 + 12H_2O$ + Chlorophyll + Sunlight $\rightarrow C_6H_{12}O_6 + 6CO_2 + 6H_2O$

28. Choose the event that does not occur in photosynthesis

(a) Absorption of light energy by chlorophyll
(b) Reduction of carbon dioxide to carbohydrates
(c) Oxidation of carbon to carbon dioxide
(d) Conversion of light energy to chemical energy

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29. The opening and closing of the stomatal pore depends upon

(a) oxygen
(b) temperature
(c) water in guard cells
(d) concentration of CO_2 in stomata

30. Choose the forms in which most plants absorb nitrogen

(i) Proteins
(ii) Nitrates and Nitrites
(iii) Urea
(iv) Atmospheric nitrogen

(a) (i) and (ii) (b) (ii) and (iii)
(c) (iii) and (iv) (d) (i) and (iv)

31. Which is the first enzyme to mix with food in the digestive tract?

(a) Pepsin
(b) Cellulase
(c) Amylase
(d) Trypsin

32. Which of the following statement(s) is (are) correct?

(i) Pyruvate can be converted into ethanol and carbon dioxide by yeast
(ii) Fermentation takes place in aerobic bacteria
(iii) Fermentation takes place in mitochondria
(iv) Fermentation is a form of anaerobic respiration

(a) (i) and (iii) (b) (ii) and (iv)
(c) (i) and (iv) (d) (ii) and (iii)

33. Lack of oxygen in muscles often leads to cramps among cricketers. This results due to

(a) conversion of pyruvate to ethanol
(b) conversion of pyruvate to glucose
(c) non conversion of glucose to pyruvate
(d) conversion of pyruvate to lactic acid

34. Choose the correct path of urine in our body

(a) kidney → ureter → urethra → urinary bladder
(b) kidney → urinary bladder → urethra → ureter
(c) kidney → ureters → urinary bladder → urethra
(d) urinary bladder → kidney → ureter → urethra

35. During deficiency of oxygen in tissues of human beings, pyruvic acid is converted into lactic acid in the

(a) cytoplasm
(b) chloroplast
(c) mitochondria
(d) golgi body

Short Answer Questions

36. Name the following

(a) The process in plants that links light energy with chemical energy
(b) Organisms that can prepare their own food
(c) The cell organelle where photosynthesis occurs
(d) Cells that surround a stomatal pore
(e) Organisms that cannot prepare their own food
(f) An enzyme secreted from gastric glands in stomach that acts on proteins.

37. "All plants give out oxygen during day and carbon dioxide during night". Do you agree with this statement? Give reason.

38. How do the guard cells regulate opening and closing of stomatal pores?

39. Two green plants are kept separately in oxygen free containers, one in the dark and the other in continuous light. Which one will live longer? Give reasons.

40. If a plant is releasing carbon dioxide and taking in oxygen during the day, does it mean that there is no photosynthesis occurring? Justify your answer.

41. Why do fishes die when taken out of water?

42. Differentiate between an autotroph and a heterotroph.

43. Is 'nutrition' a necessity for an organism? Discuss.

44. What would happen if green plants disappear from earth?

45. Leaves of a healthy potted plant were coated with vaseline. Will this plant remain healthy for long? Give reasons for your answer.

46. How does aerobic respiration differ from anaerobic respiration?

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47. Match the words of Column (A) with that of Column (B)

Column (A)	Column (B)
(a) Phloem	(i) Excretion
(b) Nephron	(ii) Translocation of food
(c) Veins	(iii) Clotting of blood
(d) Platelets	(iv) Deoxygenated blood

48. Differentiate between an artery and a vein.

49. What are the adaptations of leaf for photosynthesis?

50. Why is small intestine in herbivores longer than in carnivores?

51. What will happen if mucus is not secreted by the gastric glands?

52. What is the significance of emulsification of fats?

53. What causes movement of food inside the alimentary canal?

54. Why does absorption of digested food occur mainly in the small intestine?

55. Match Group (A) with Group (B)

Group (A)	Group (B)
(a) Autotrophic nutrition	(i) Leech
(b) Heterotrophic nutrition	(ii) Paramecium
(c) Parasitic nutrition	(iii) Deer
(d) Digestion in food vacuoles	(iv) Green plant

56. Why is the rate of breathing in aquatic organisms much faster than in terrestrial organisms?

57. Why is blood circulation in human heart called double circulation?

58. What is the advantage of having four chambered heart?

59. Mention the major events during photosynthesis

60. In each of the following situations what happens to the rate of photosynthesis?

(a) Cloudy days

(b) No rainfall in the area

(c) Good manuring in the area

(d) Stomata get blocked due to dust

61. Name the energy currency in the living organisms. When and where is it produced?

62. What is common for cuscuta, ticks and leeches?

63. Explain the role of mouth in digestion of food.

64. What are the functions of gastric glands present in the wall of the stomach?

65. Match the terms in Column (A) with those in Column (B)

Column (A)	Group (B)
(a) Trypsin	(i) Pancreas
(b) Amylase	(ii) Liver
(c) Bile	(iii) Gastric glands
(d) Pepsin	(iv) Saliva

66. Name the correct substrates for the following enzymes

(a) Trypsin (b) Amylase
(c) Pepsin (d) Lipase

67. Why do veins have thin walls as compared to arteries?

68. What will happen if platelets were absent in the blood?

69. Plants have low energy needs as compared to animals. Explain.

70. Why and how does water enter continuously into the root xylem?

71. Why is transpiration important for plants?

72. How do leaves of plants help in excretion?

Long Answer Questions

73. Explain the process of nutrition in *Amoeba*.

74. Describe the alimentary canal of man.

75. Explain the process of breathing in man.

76. Explain the importance of soil for plant growth.

77. Draw the diagram of alimentary canal of man and label the following parts.

Mouth, Oesophagus, Stomach, Intestine

78. How do carbohydrates, proteins and fats get digested in human beings?

79. Explain the mechanism of photosynthesis.

80. Explain the three pathways of breakdown in living organisms.

81. Describe the flow of blood through the heart of human beings.

82. Describe the process of urine formation in kidneys.

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