

SANSKAR INTERNATIONAL SCHOOL

ASSIGNMENTS OF CHAPTER-6

SUBJECT-SCIENCE

LIFE PROCESSES - NUTRITION

EXERCISE

A) Objective question:

1. The autotrophic mode of nutrition requires
 - a) carbon dioxide and water.
 - b) Chlorophyll.
 - c) Sunlight.
 - d) all of the above.
2. Which of the following organisms is a saprophyte?
 - a) Yeast
 - b) Ascaries
 - c) Leech
 - d) Vulture
3. Which of these is not a raw material for photosynthesis?
 - a) Carbon dioxide
 - b) Water
 - c) Oxygen
 - d) None of these
4. The food is stored in which form in leaves?
 - a) Glucose
 - b) Fructose
 - c) Glycogen
 - d) Starch
5. The salivary gland secretes which of these enzymes?
 - a) Pepsin
 - b) Lipase
 - c) Amylase
 - d) Trypsin
6. how many water molecules are required in a chemical reaction to produce one molecule of glucose during photosynthesis?
 - a) 6
 - b) 12
 - c) 18
 - d) 24
7. Maximum absorption of digested food take place through
 - a) stomach
 - b) duodenum
 - c) ileum
 - d) rectum

8. how many saliva is secreted by the salivary glands in one day in buccal cavity of man?
- 700-800 ml
 - 1000-1500ml
 - 2000-3000ml
 - 3000-5000ml.
9. the rate of photosynthesis will be maximum in
- red light
 - blue light
 - yellow light
 - green light
10. The first step in photosynthesis is:
- Photolysis of water
 - Formation of ATP
 - Excitation of an electron of chlorophyll by a photon of light
 - Reduction of carbon
11. Which organisms are capable of photosynthesis?
- plants only
 - plants and some bacteria
 - plants and algae only
 - plants, algae and some bacteria
12. By which of the following bile is secreted in human digestive system?
- Pancreas
 - Liver
 - Kidney
 - Stomach
13. The action of bile can be termed as:
- Esterification
 - Hydrogenation
 - Oxidation
 - Emulsification
14. The largest gland associated with the human alimentary canal is
- Stomach
 - Liver
 - Pancreas
 - Small intestine
15. In which of the following organs, protein digestion occurs first?
- Mouth
 - Stomach
 - Small intestine
 - Large intestine
16. Movement of food through oesophagus is due to
- Lubrication by saliva
 - Peristalsis
 - Gravitational pull
 - all of the above
17. Where is bile produced?
- gall bladder

- b) Blood
 - c) Liver
 - d) Spleen
18. During digestion, fats are broken down to
- a) Fatty acid and glycerol
 - b) Glucose
 - c) Micelles
 - d) Amino acid
19. What is the pH of digestive juice found in the stomach?
- a) 2
 - b) 4
 - c) 6
 - d) 7
20. Which one of the organism can live without oxygen of air?
- a) Amoeba
 - b) Sheep
 - c) Yeast
 - d) Leech
21. The oxygenated blood is carried from lungs to left auricle by
- a) Vena cava
 - b) Pulmonary vein
 - c) Pulmonary artery
 - d) Aorta
22. Respiration is a process in which
- a) Energy is stored in the form of ATP
 - b) Energy is used up
 - c) Energy is released and stored in the form of ATP
 - d) Energy is not released at all
23. Site of gaseous exchange in lungs is :
- a) Trachea
 - b) Bronchioles
 - c) Alveoli
 - d) Pulmonary chamber.
24. In the process of respiration
- a) ADP is converted to ATP
 - b) Glucose is converted to carbon dioxide
 - c) Glucose is converted to carbon dioxide and water, releasing energy.
 - d) Pyruvic acid is converted to ATP
25. the final product of glycolysis is
- a) Lactic acid
 - b) Glucose
 - c) Ethanol
 - d) Pyruvate
26. gaseous exchange in plants takes place through the
- a) Stomata
 - b) Gills
 - c) Lungs

- d) Alveoli
27. Aerobic respiration takes place in the
- Nucleus
 - Cytoplasm
 - Mitochondria
 - Vacuole
28. The percentage of carbon dioxide in the inhaled air is ____% and exhaled air is ____%.
- 0.04 and 4
 - 4 and 0.04
 - 0.04 and 0.04
 - 4 and 4
29. Anaerobic respiration in the muscles does not produce _____.
- Lactic acid
 - Energy
 - Carbon dioxide
 - Both a and b
30. Inner membrane involutions of a mitochondria are called
- Lamellae
 - Cristae mitochondriales
 - Thylakoids
 - Tubules
31. The intermediate product of glycolysis which undergoes lysis or splitting is
- Fructose 1-6 diphosphate
 - Dihydroxyacetone 3 phosphate
 - Glucose - 6 - phosphate
 - Glyceraldehyde - 3 - phosphate
32. Enzymes taking part in glycolysis are present in
- Vacuole
 - Mitochondria
 - Cytoplasm
 - Both (B) and (C)
33. In respiration, pyruvic acid is
- Formed only when the cell is with mitochondria
 - Formed only when oxygen is available
 - Formed only when cell is performing aerobic respiration
 - Commonly formed as intermediate product of aerobic and anaerobic respiration
34. End products of aerobic respiration are
- Sugar and oxygen
 - Water and energy
 - Carbon dioxide and energy
 - Carbon dioxide, water and energy
35. The kidneys in human beings are a part of the system for
- nutrition.
 - respiration.
 - excretion.
 - transportation.

36. The xylem in plants are responsible for
- transport of water.
 - transport of food
 - transport of amino acids.
 - transport of oxygen.
37. Which of the following have the thickest wall?
- Artery
 - Vein
 - Capillary
 - Arteriole
38. What do the red blood cells pick up from lungs and transport to the rest of the body?
- Urea
 - O₂
 - Co₂
 - NaCl
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- Nutrition
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 - Excretion
 - Transportation
40. The xylem in plant responsible for
- Transport of water
 - Transport of food
 - Transport of amino acids
 - Transport of oxygen
41. the breakdown of pyruvate to give carbon dioxide, water and energy take places in
- Cytoplasm
 - Mitochondria
 - Chloroplast
 - Nucleus
42. Haemoglobin is a type of
- Carbohydrate
 - Skin pigment
 - Vitamin
 - Respiratory pigment
43. Which of the following is not a nitrogenous waste that must be excreted from the body?
- Ammonia
 - Urea
 - Uric acid
 - Faeces
44. the tissue responsible for transport of organic nutrients from the sources is :
- Xylem
 - Phloem
 - Bast fibres
 - None of these
45. what is blood pressure ?

- a) pressure of blood on heart muscles
- b) pressure of flow of blood exerted on walls of arteries and veins
- c) The pressure blood on the wall of veins only
- d) The pressure of blood on the wall of arteries only

B). FILL IN THE BLANK (question carries one marks) -

1. In human, the right lung is..... lobed.
2. Carbonic anhydrase regulates the formation of
3. Principal waste product of metabolism in humans is.....
4. valve separates the left atrium from the left ventricle.....
5. Energy rich compound generated during photosynthesis is
6. Ninety percent of the water lost by the plants during transpiration is through the of the leaf.
7. Blood circulation in humans is called.....circulation.
8. Pressure in the arteries during ventricular relaxation is called.....pressure.
9. are regarded as complete photosynthetic units.....of plants.
10. Starch changes blue in.....solution.
11. are the lymphatic capillaries arising from the small intestine.
12.are fat soluble vitamins.
13. Two.....are present on both sides of the stomata.
14. Largest digestive gland in the human body is
15. The structural and functional units of lungs is
16. The prevents the entry of food into the respiratory tract.
17.help in emulsification of fats.
18. In....., waste is removed by diffusion.
19. Synthesis of ATP using light energy in photosynthesis is
21. node is present near the opening of superior and inferior vena cavae.
22. A plant pigment known as is involved in the phenomenon of photoperiodism.
23. Man is.....in nutrition.
24. involves the intake of complex material prepared by other organisms.
25. Contraction of heart is known as
26. The major function of the blood cells is to transport oxygen.
27. The semiliquid mixture of partially digested food found in the stomach is called
28. The functional unit of the mammalian kidney is the.....
29. are the solid bodies in fruits in which waste is.....stored.
30. veins pour their blood into left atrium.
31. Glomerulus occurs in.....capsule.
32. Kidney eliminate the excretory waste materials as their aqueous solution, called
33. secretes bile and cholesterol.
34.movements occur along the gut.
35. Second heart sound heard as.....is due to closure of..... valves at the beginning of ventricular diastole.
36. The thin double-walled sac enclosing the heart is called

C). Very short- answer questions (1 mark)

1. Which enzyme is present in saliva breaks down starch?
2. what is mode of nutrition in mode of fungi?
3. name the pigment which can absorb the solar energy
4. How does amoeba engulf its food?
5. Mention the site of complete digestion of carbohydrate, proteins and fats in humans.
6. In an experiment, saliva is added to the test tube containing pieces of bread. What will be the result?.
7. Which is the largest digestive gland in human body? What is its function?
8. Mention the role of HCL in the stomach.
9. In which part of digestive system water is absorbed.
10. What are stomata?
11. What is the nature of chime? Acidic or basic?
12. What is the function of mucus secreted in stomach during digestion?
13. What is the optimum temperature for photosynthesis?
14. Where does the light reaction occur in the chloroplast?
15. Where does the dark reaction occur in the chloroplast?
16. What are peristaltic movements?
17. What do you mean by the term absorption?
18. What is chime?
19. Define assimilation.
20. State the function and location of gastric glands.
21. Define the following terms
A) Nutrition
B) parasite
22. Name one enzyme found in pancreatic juice.
23. Name one enzyme that helps in the digestion of proteins.
24. Name the product and by product of photosynthesis.
25. What are the end products of light dependant reaction?
26. Which cell organelle is the site of photosynthesis?
27. What is the difference between digestion of heterotrophs and saprotrophs?
28. What is the function of mucus in gastric gland?
29. Give the functions of hydrochloric acid for the body.
30. What are respiratory substrates? Name the most common respiratory substrate.
31. What is oxidative phosphorylation?
32. What are the two ways of oxidation of glucose to provide energy?
33. How does amoeba respire?
34. What are stomata?
35. When we breathe out, why does the air passage not collapse?
36. What is the function of platelets?
37. How does breathing take place in fishes?
38. How do plants get rid of their waste products?
39. Why do aquatic organisms show a higher breathing rate?
40. why do we feel muscle cramps after heavy exercise?
41. Why is it advised to breathe through nose?
42. What is a diaphragm?

43. What is the other name of larynx?
44. Write the full form of NADP and ATP.
45. Name three types of blood vessels used in the transport of blood.
46. Name the respiratory organs of: (i) fish (ii) mosquito (iii) earthworm
47. What is the function of mucus and fine hair in nostrils?
48. Give the function of network of capillaries on alveoli.
49. Name the main carrier of oxygen and carbon dioxide in man.
50. Name the site of anaerobic and aerobic respiration in a cell.
51. Where does the blood absorb oxygen in the human body?
52. What are the steps involved in the formation of lactic acid from glucose?
53. In what forms are oxygen and carbon dioxide transported in the blood.
54. Define aerobic and anaerobic reaction with reaction.
55. What is blood pressure?
56. Write the function of two upper chambers of human heart.
57. Why are valves present in heart and veins?
58. Why the walls of ventricles are thicker than the walls of atria?
59. Define excretion.
60. List the toxic wastes of metabolism.
61. Name the functional and structural unit of kidney.
62. What is hemodialysis?
63. Why does uric acid is the best nitrogenous waste product for insects, reptiles and birds?
64. Name the two methods in use during chronic renal (kidney) failure.
65. Which mechanism plays an important role in transportation of water in plants?
66. Why human circulatory system is also called blood vascular system?
67. Which chamber of heart receives deoxygenated blood?
68. What are blood platelets?
69. What is mainly digested by stomach of man?
70. What is common between respiration and transpiration process in plants?
71. What will happen if a human being starts taking air with mouth instead of nose?
72. What stops blood from flowing backwards through the heart?
73. When the right atrium contracts, blood flows from it to which part of the heart?
74. What is the systolic and diastolic pressure of a normal man?
75. Name the excretory organs in unicellular organisms.
76. What are the major constituents of urine?
77. State the process by which chemical from blood enter the dialysing fluid?
78. Name the substance which is present in the blood, but not in the urine of a healthy person?
79. What is the main function of kidneys in humans?
80. Name the two parts of vascular system in plants.
81. Name the tissue that conducts water and minerals obtained from the soil.
82. Name the conducting elements of xylem.
83. What is translocation?
84. What is excretion? How do unicellular organisms remove their wastes?
85. List any two strategies used by plants for excretion.
86. What protects the trachea from collapsing?
87. Why blood vessels do not show clotting of blood?
88. Which is the functional unit of kidney?
89. What is the cup shaped structure of nephron called?

90. Which materials are selectively reabsorbed by nephron tubule?
91. What are the two important functions of kidney.
92. What is the other name of artificial kidney?
93. What are the two substances transported through phloem tissue?
94. Name the food component whose digestion produce nitrogenous waste?
95. Which process acts as suction to pull water from xylem cells of roots.
96. What is the direction of flow of water in xylem and food in phloem?
97. What is the other name of lymph?
98. Give two function of lymph.
99. Name the device that measures blood pressure.
100. What is the normal blood pressure of man?
101. Why capillaries are thin walled?
102. Why is right kidney placed slightly lower in position as compared to the left kidney?
103. Which substance is selectively reabsorbed by the tubular part of nephron?
104. Out of about 170L of fluid filtered by the kidneys every day. How much is excreted in urine?
105. Name the substance which is present at a higher concentration in renal artery than in renal vein.
106. Why is urine yellow in colour?
107. Kidneys help in the process of osmoregulation? Explain.
108. Give example of any three substances transported by plasma.
109. Why is energy is required by an organism even during sleep.
110. Give an example of an organism which derives nutrition from plants or animals without killing them. What are these organisms called?
111. In an experiment, saliva is added to the test tube containing pieces of bread (powdered). What will you observe?
112. What are the end products obtained on digestion of carbohydrates and proteins?
113. Name the cell organelle in which breakdown of pyruvate to give CO₂, water and energy takes place.
114. It is seen that during aerobic respiration more energy is released as compared to the anaerobic respiration. Why?
115. During breathing cycle, what is the advantage of residual volume of air in lungs?
116. Why carbon dioxide is mostly transported in dissolved form?
117. Why the walls of ventricles are thicker than the walls of atria?
118. What will happen if platelets are absent in the blood?
119. Leakage of blood from vessels reduces the efficiency of pumping system. How is the leakage prevented?
120. Name two excretory products in plants other than oxygen and carbon dioxide.
121. Name a common nutrient that is absorbed in the small intestine and reabsorbed by the kidney tubules.
122. Where does digestion of fat takes place in our body?
123. What is the role of acid in our stomach?
124. Name the respiratory pigment in human beings. Where is this pigment found?
125. Why is the rate of breathing in aquatic organisms much faster than in terrestrial organisms?
126. Name the process of loss of water in the form of vapour from the aerial parts of the plants.

127. How is the amount of urine produced regulated?
128. How would the digestion of food be affected if the bile duct is completely blocked?
129. Which raw material is responsible for the release of O_2 in photosynthesis?
130. Fishes die when taken out of water. Why?
131. Why does a piece of bread start tasting sweeter after it is chewed for sometime?
132. How is urine produced?
133. What will happen if the liver of a person gets damaged?
134. Compare between the process of respiration in plants during night and day time.
135. Enumerate the difference between translocation and transpiration.
136. Tabulate two differences between renal artery and renal vein.

Directions : In the following questions, a statement of Assertion is followed by a statement of Reason. Mark the correct choice as:- (question carries one marks)

- (a) If both Assertion and Reason are true, and Reason is the correct explanation of Assertion
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- (c) If Assertion is true, but Reason is false
- (d) If Reason is true, but Assertion is false
- (e) If both Assertion and Reason are false

1. **Assertion:** Lungs always contain a residual volume of air.
Reason: It is so to ensure enough time for the release of CO_2 and for the absorption of O_2 .
2. **Assertion:** In a healthy adult, the initial filtrate in the kidneys is about 180 L daily, but the actual volume excreted is only a litre a day.
Reason: Most of the filtrate is lost from the body in the form of sweat.
3. **Assertion:** Respiration is opposite of Photosynthesis
Reason: In Photosynthesis food is made from energy and in Respiration food is converted to energy.
4. **Assertion:** The four chambered heart does not mix oxygenated and deoxygenated blood.
Reason: Four chambered heart is found in mammals with advanced body functions.
5. **Assertion:** Translocation of food occurs in Plants.
Reason: Xylem tissue is responsible for Translocation.
6. **Assertion :** in the daytime, CO_2 generated during respiration is used up for photosynthesis.
Reason : There is no CO_2 release during day.
7. **Assertion :** Raw materials needed for photosynthesis are carbon dioxide, water and minerals.

Reason : Nutrients provide energy to an organism.

8. Assertion : Lungs always contain a residual volume of air.
Reason : It provides sufficient time for oxygen to be absorbed and for carbon dioxide to be released.
9. Assertion : Transpiration is a necessary evil.
Reason : It causes water loss but helps in absorption and upward movement of water and minerals.
10. Assertion : Translocation of sugar occurs through the phloem.
Reason : It is achieved by diffusion of sugars through phloem.
11. Assertion : Digestion breaks large complex molecules to simple smaller molecules which can be easily absorbed.
Reason : Digestion is necessary for the absorption of all molecules.
12. Assertion : Energy is used during the process of respiration.
Reason : Respiration stores energy in the form of ATP.
13. Assertion : During physiology of excretion, deamination does not take place in liver.
Reason : Deamination is a process to make use of excess of amino acids which cannot be incorporated into protoplasm.
14. Assertion : Egestion is the removal of nitrogenous waste products from the body.
Reason : Excretion is the discharge of undigested matter from the digestive tract.
15. Assertion : The muscular walls of ventricles are thicker than auricles.
Reason : This helps in preventing the back flow of blood.
16. Assertion : In human heart, there is no mixing of oxygenated and deoxygenated blood.
Reason : Valves are present in the heart which allows the movement of blood in one direction only.
17. Assertion : In woody plants, gaseous exchange occurs through lenticels.
Reason : Lenticels are specialised cells found along with stomata on the stem of woody plants.
18. Assertion : Excretory unit of kidney is nephrons.
Reason : It has no role in secretion of urine.
19. Assertion : Muscles of stomach wall possess thick layers of muscles.
Reason : These muscles help in mixing the food with the enzymes presents in the alimentary canal.
20. Assertion : Artificial kidney is a device used to remove nitrogenous waste products from the blood through dialysis.

Reason : Reabsorption does not occur in artificial kidney.

21. Assertion : Plants excrete various waste products during their life processes.

Reason : They produce urea just like humans.

22. Assertion : In anaerobic respiration, one of the end product is alcohol.

Reason : There is an incomplete breakdown of glucose.

23. Assertion : Bile is essential for digestion of lipids.

Reason : Bile juice contains enzymes.

24. Assertion : Haemodialysis can save the life of patients with kidney failure.

Reason : Waste products like urea can be removed from the blood by haemodialysis.

25. Assertion : In humans, major amount of water is absorbed by the tubular part of nephron.

Reason : Absorption of water depends on the dissolved waste to be excreted from the body.

26. Assertion : Photosynthesis is an anabolic process.

Reason : The process of photosynthesis occurs in chlorophyll.

27. Assertion : In humans, there is a complex respiratory system.

Reason : Human skin is impermeable to gases.

28. Assertion : Photorespiration decreases net photosynthesis.

Reason : Rate of respiration in dark and light is almost same in all plants.

29. Assertion : HCl converts pepsinogen into active enzyme pepsin.

Reason : Pepsin converts protein into proteoses and peptones.

30. Assertion : Autotrophic nutrition occurs in green plants.

Reason : Green plants self-manufacture their

31. Assertion : Haemoglobin is the respiratory pigment in human beings.

Reason : It transports oxygen in the human body.

32. Assertion : Interauricular septum separates left from right atrium.

Reason : Interventricular septum separates left from right ventricle.

33. Assertion : Blood of insects is colourless.

Reason : The blood of insect does not play any role in transport of oxygen.

34. Assertion : All the arteries carry oxygenated blood from the heart to various organs.

Reason : Pulmonary vein carries deoxygenated blood to the heart.

35. Assertion : Human body produces highly toxic substances, which if not eliminated may cause the death.

Reason : Excretory substance removes nitrogenous waste from the body.

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36. Assertion : Amoeba is an omnivore organism.
Reason : Lion is a carnivore organism.
37. Assertion : Liver is known as the smallest gland of the body.
Reason : It secretes salivary amylase.
38. Assertion : Carbohydrate digestion mainly takes place in small intestine.
Reason : Pancreatic juice contains the enzyme lactase.
39. Assertion : Valves are present in the arteries.
Reason : Arteries carry oxygenated blood from heart to different body parts except pulmonary artery.
40. Assertion : Plants lack excretory organs.
Reason : Plants usually absorb essential nutrients.
41. Assertion : Muscles of stomach wall possess thick layers of muscles.
Reason : These muscles help in mixing the food with the enzymes present in the alimentary canal.
42. Assertion : Artificial kidney is a device used to remove nitrogenous waste products from the blood through dialysis.
Reason : Reabsorption does not occur in artificial kidney.
43. Assertion : Respiration is a biochemical process opposite to photosynthesis.
Reason : Energy is released during respiration.

Short- answer questions-type-A (2 mark each)

1. Name the two glands associated with the digestive system in humans. Also name their secretion.
2. Draw a labeled diagram of stomata. Write any two functions of it.
3. How is food absorbed from the walls of the small intestine?
4. What do you call the secretion of the stomach? How does the wall of the stomach protect itself from the action of highly acidic HCl?
5. How opening and closing of stomata is regulated in the leaves of plants?
6. Stomata remain closed in desert plants. How do they obtain carbon dioxide for photosynthesis?
7. Explain the role of the following in the process of digestion in the human body
A) saliva B) Trypsin
8. How is fat digested in our body? And Where does this take place?
9. Gastric juice contains both enzymes and HCl. Why do these not affect the stomach lining?

10. Name the glands present in the wall of the stomach that are release secretion that are released by these glands. Write three components of secretion that are released by these glands.
11. Why bile juice is considered important even though it does not contain any digestive enzymes?
12. What are the various processes that take place in the duodenum?
13. Explain the significance of peristaltic movement that occurs all along the gut during digestion.
14. what is the main function of the bile juice?
15. what is the role of saliva in the digestion of food?
16. Give example of two plants and two animal parasites.
17. Name the enzyme present in saliva, what is its role in digestion
18. Give two functions of bile juice, from which organ it is released?
19. Why pancreas is called mixed gland?
20. Identify and name the organ where the following process take place:
 - a) Site of the complete digestion of carbohydrates, proteins and fats
 - b) Site of absorption of digested food.
21. What are the main steps in aerobic respiration? Where does it take place?
22. Why is diffusion insufficient to meet the oxygen requirements of multi-cellular organisms like humans?
23. What is fermentation? What is its use?
24. Name the five steps of Holozoic nutrition
25. How are the alveoli designed to maximize the exchange of gases?
26. 'Respiration is a vital function of the body. Justify.
27. Mention the role of the valves in maintaining blood flow in the heart.
28. Name the hormone that controls the rate of respiration. Also name the part of the brain responsible for controlling respiration.
29. What are alveoli? Mention their role in respiration
30. What is the site of gaseous exchange in lungs?
31. Name the various parts of the conducting portion of the respiratory system.
32. Name the only natural process by which oxygen is liberated for use in respiration by all organisms.
33. The breathing rate of aquatic animals is high, why?
34. A three carbon compound is the common product of both aerobic and anaerobic pathway. What is that?
35. Why is it necessary to separate oxygenated and deoxygenated blood in living organisms?
36. Why is anaerobic respiration produce less energy compared to aerobic respiration.?
37. why unicellular organisms do not need a system for transport of materials?
38. What are the two main functions of kidneys?
39. what is the basic reason of urine production?
40. state the role of kidneys in human transport system
41. What will happen if the blood is deficient in haemoglobin?
42. How transportation through xylem is different from the transportation through phloem?
43. "Respiration is an exothermic reaction." Justify this statement giving the chemical equation for the reaction involved.
44. Major amount of water is selectively reabsorbed by the tubular part of nephron in humans. What are the factors on which the amount of water reabsorbed depends?

45. How transpiration helps in ascent of sap?
46. In human beings R.B.C's are non-nucleated. Does it mean that they are prokaryotic cells?
47. What would be the consequences of deficiency of haemoglobin in our bodies?
48. What processes would you consider essential for maintaining life?
49. What are the differences between autotrophic nutrition and heterotrophic nutrition?
50. Where do plants get each of the raw materials required for photosynthesis?
51. What is the role of the acid in our stomach?
52. What is the function of digestive enzymes?
53. How is the small intestine designed to absorb digested food?
54. How are fats digested in our bodies? Where does this process take place?
55. What is the role of saliva in the digestion of food?
56. What are the necessary conditions for autotrophic nutrition and what are its by-products?
57. Write any two causes that may damage the kidney of a person.
58. Define transpiration. In what way is transpiration important for plants?
59. Why is there no mixing of deoxygenated and oxygenated blood in the human heart?
60. State two difference between artery and vein on the basis of
 - (a) Type of blood it carries
 - (b) Valves
61. Why does haemoglobin molecule act as efficient carrier of oxygen than diffusion process?
62. How is water absorbed by the roots of plants?
63. Give various functions of human kidneys
64. What is meant by haemodialysis? Why is it done ?
65. Describe the function of nephrons.
66. give the role of :
 - (i) pulmonary vein
 - (ii) venacava

Short- answer questions-type-B (3 mark)

1. Pancreas is known as a herterocrine gland. Explain.
2. Describe the pathway followed by fats when taken in the form of food in the body.
3. What is the function of digestive enzymes?
4. What is the role of saliva in the digestion of food?
5. What are the functions of Bile Juice?
6. What regulates the exit of food from stomach?
7. What criteria do we use to decide whether something is alive?
8. What are the function of liver and pancreas?
9. Why does absorption of digested food occur mainly in the small intestine?
10. Explain the statement "bile does not contain any enzyme but it is essential for digestion".
11. Why does absorption of digested food occur mainly in the small intestine?
12. How does amoeba get its nutrition? Explain with the help of labeled diagram.
13. What is chemotropism? Give one example. Name any two plant hormones and mention their functions.
14. villi are present in the small intestine comment.
15. discuss briefly:

a. Light reaction b. dark reaction

16. draw a diagram human alimentary canal showing duodenum, small intestine, liver and pancreas.
17. Where do carbohydrates, proteins and fats get digested in human beings.
18. Although bile juice has no digestive enzymes, it is still considered to be very important during the digestion of food. Give two reasons.
19. Explain ETS.
20. What advantage over an aquatic organism does a terrestrial organism have with regard to obtaining oxygen for respiration?
21. What are the different ways in which glucose is oxidized to provide energy in various organisms?
22. How are lungs designed in human beings to maximize the area for exchange of gases?
23. During breathing cycle, what is the advantage of residual volume of air in lungs? explain.
24. What are the end products formed during fermentation in yeast? Under what conditions a similar process takes place in our body that leads to muscle cramps?
25. Why multicellular organisms require special organs for exchange of gases between their body and their environment?
26. Give reasons for the following:
27. The glottis is guarded by epiglottis.
28. The lung alveoli are covered with blood capillaries.
29. The wall of trachea is supported by cartilage rings.
30. State the role of the following in the human respiratory system
 - I. Nasal cavity
 - II. Diaphragm
 - III. Alveoli
31. *How are inhalation and exhalation carried out?*
32. haemoglobin plays an essential role of being a respiratory pigment in human beings. Justify this statement.
33. State the role of the following in human respiratory system.
 - (a) Nasal Hairs (b) Diaphragm (c) Alveoli
34. State reason for the following
 - (a) Trachea does not collapse when it has insufficient air.
 - (b) Aquatic animals breathe rapidly.
 - (c) Haemoglobin is present in RBC in humans.
35. Describe the process of respiration in human beings.
36. What are the different ways in which glucose is oxidized to provide energy in various organisms?
37. What are the different ways in which glucose is oxidized to provide energy in various organisms?
38. Draw a diagram of respiratory system and label any four parts of it.
39. Give reason to explain why endocrine glands release their secretion into the blood directly.
40. Explain the structure of bronchi with the help of net diagram and label on it
 - i. trachea
 - ii. Bronchiole
41. Discuss the significance of haemoglobin in respiration.
42. What are the characteristic of respiration in plants?
43. Why do we get muscle cramp after vigorous exercise?
44. Distinguish between lactic acid and alcoholic fermentation?

45. Why doesn't the lung collapse even after forceful expiration?
46. Why is the process of diffusion insufficient to meet the oxygen requirement of human beings?
47. Why does aerobic break down of pyruvate take place in a living cell? What are the end products?
48. How is oxygen and carbon dioxide transported in human beings?
49. What are the components of the transport system in human beings? What are the functions of these components?.
50. What are the components of the transport system in highly organised plants?
51. How are water and minerals transported in plants?
52. How is food transported in plants?
53. Describe the structure and functioning of nephrons.
54. What are the methods used by plants to get rid of excretory products?
55. How is the amount of urine produced regulated?
56. Lymph is another type of fluid involved in transportation. Justify the statement by two reason.
57. How the urine is formed in the excretory system?
58. Explain the mechanism of gaseous exchange during respiration.
59. (a) Draw the diagram of human heart and label the following parts which:
 - (i) Receives deoxygenated blood from vena cava.
 - (ii) Send deoxygenated blood to lung through pulmonary artery.
 - (iii) Receives oxygenated blood from lungs.
 - (iv) Sends oxygenated blood to all parts of the body through aorta.
 (b) What does the blood consist of? (c) Write two functions of blood.
60. Give reasons for the following :
61. (a) Why diffusion is not sufficient to meet the oxygen requirements of all the cells in multicellular organisms?
(b) How desert plants perform photosynthesis if their stomata remain closed during the day?
62. Draw a schematic representation of transport and exchange of oxygen and CO₂ in human body.
63. What is translocation? How it take place in plants?
64. What changes take place in the muscles of diaphragm during the process of inhalation and exhalation? Also give reason for these changes?
65. How are the alveoli designed to maximize the exchange of gases ?
66. How an artery is different from the vein?
67. state the role and function of lymph in human transport system.
68. Differentiate between blood and lymph
69. Write any two causes that may damage the kidney of a person.
70. Define transpiration. In what way is transpiration important for plants?
71. Why is there no mixing of deoxygenated and oxygenated blood in the human heart?
72. State two difference between artery and vein on the basis of
 - (a) Type of blood it carries
 - (b) Valves
73. Why does haemoglobin molecule act as efficient carrier of oxygen than diffusion process?
74. How is water absorbed by the roots of plants?
75. Give various functions of human kidneys
76. What is meant by haemodialysis? Why is it done ?

77. Describe the function of nephrons.
78. give the role of : (i) pulmonary vein (ii) venacava
79. What are the adaptations of leaf for photosynthesis?
80. State the function of the following in the alimentary canal
(i) Liver (ii) Gall bladder (iii) Villi
81. (i) A product is formed in the cytoplasm of our muscles due to breakdown of glucose when there is a lack of oxygen. Name the product and also mention the effect of build-up of this product.
(ii) Differentiate between fermentation in yeast and aerobic respiration on the basis of end products formed.
82. What is the logic behind the heavy breathing as we climb up a mountain?
83. What is the role of respiratory pigment in respiration? Give one example.
84. State reason for the following:
(i) Arteries have thick and elastic walls
(ii) Arteries form capillaries
85. Describe translocation? How does translocation take places in plants?
86. Major amount of water is selectively reabsorbed by the tubular part of nephron. Write the factors on which the amount of water reabsorbed depends?
87. (i) Write the important functions of the structural and functional unit of kidney.
(ii) Write any one function of an artificial kidney.
88. State the necessary conditions for autotrophic nutrition and name the by-product. Mention the source of this by-product.
89. Enumerate three events which occur during the process of photosynthesis.
90. Sweet tooth may lead to tooth decay. Explain why? What is the role of toothpaste in preventing cavities?
91. Name three different glands associated with the digestive system in humans. Also, name their secretions.
92. List the role of each of the following in our digestive system:
93. (i) Muscles of Stomach wall
(ii) Hydrochloric acid
(iii) Mucus.
94. A variegated leaf with green and yellow patches is used for an experiment to prove that chlorophyll is required for photosynthesis. Before the experiment, the green portions (A), and the pale-yellow portions (B), are observed. What will be the colour of 'A: just before and after the starch test? Also write the equation of photosynthesis and mark, as well as validate from which molecule the by-product is obtained.
95. Define breathing. Explain the mechanism of breathing in human beings.
96. List three characteristics of lungs which make it an efficient respiratory surface.
97. Define transpiration. State its two functions.
98. (a) How does the transport of materials in xylem and phloem occurs?
(b) What is translocation?
99. (a) What is lymph?
(b) How is composition of lymph different from blood plasma?
(c) List two functions of lymphatic system.
100. (i) Why do ventricles have thicker, muscular walls than atria?
(ii) What are peristaltic movements?

- (iii) 'Stomata remain closed in desert plants during day time.' How do they do photosynthesis?
101. Give reasons for: –
- Oxygenated and deoxygenated bloods are separate in the heart of mammals.+
 - Ventricles are thick-walled.
 - Herbivores have longer small intestine as compared to carnivores.
102. Compare the functioning of alveoli in the lungs and nephrons in the kidneys with respect to their functioning and structure.
103. How do leaves of plants aid in excretion?
104. Which feature(s) help the plants to make food by the process of photosynthesis?
105. 'Aerobic respiration produces more ATP than anaerobic respiration'. Justify this statement.
106. Write the pathway of oxygen travelling from atmosphere into the human body.
107. 'Diffusion pressure cannot deliver oxygen all over the body in bigger animals'. Comment on this statement.
108. Blood does not clot in the blood vessels. Give reason.
109. How is double circulation different from single circulation?
110. Explain, how the circulatory system carries waste products from liver to the kidneys?
111. Explain the process by which plants get rid of their excretory products?

Long - answer questions-type-B (5 mark)

- What processes would you consider essential for maintaining life?
- What are the functions of : HCl, salivary amylase, mucus and pepsin?
- What processes would you consider essential for maintaining life?
- explain the mechanism of nutrition in amoeba with illustration.
- Name the main organs of human digestive system in the order they participate in the process of digestion. Describe how digestion of carbohydrate and proteins takes place in our body?
- Draw the diagram of alimentary canal of man and label the following parts:
- Mouth · Oesophagus · Stomach · Intestine
- explain why the rate of photosynthesis in plant is lower and higher temperature.
 - (b) is green light most or least useful in photosynthesis and why?
 - (c) describe an activity to show that chlorophyll is necessary for photosynthesis in plants.
- Give reason for the following:
 - Pituitary is often termed as master gland of the body.
 - Pancreas is categorized as heterocrine gland.
 - Adrenals are known as glands of emergency.
 - Which plant hormone regulate plant growth movement i.e. tropism?

- e. Which plant hormone promotes the dormancy in seeds and bud and thus inhibits growth?

9. :-Answer the following:-

- i. Name the endocrine gland associated with brain.
 - ii. Which gland secretes digestive enzyme as well as hormone?
 - iii. Name the endocrine gland associated with kidney.
 - iv. Which endocrine gland is present in males but absent in females.
 - v. Dwarfism results due to less activity of which gland.
10. (a) Draw diagram of human alimentary canal and label the following
- a. Part in which starch digestion starts
 - b. Part in which bile is stored
 - c. Part in which nutrients are absorbed
 - d. Part in which water is absorbed
 - e. Mention the role of hydrochloric acid in the stomach.
 - f. What function is served by the following:
 - I. Gastric sphincter
 - II. Anal sphincter
11. What are plant hormones ? give four different type of plant hormones and state their functions briefly.
12. How will you prove that CO₂ is essential for photosynthesis?
13. Describe the mechanism of photosynthesis.
14. Describe the various part in the alimentary canal of man.
15. Define the terms 'nutrition' and 'nutrients'. List two differences between 'holozoic nutrition' and 'saprophytic nutrition'. Give two examples each of these two types of nutrition.
16. Differentiate between:
- a) Respiration and Combustion
 - b) Glycolysis and Krebs' cycle
 - c) Aerobic respiration and Fermentation
17. Distinguish between the following:
- a) Aerobic respiration and Anaerobic respiration
 - b) Glycolysis and Fermentation
 - c) Glycolysis and Citric acid Cycle
18. Discuss "The respiratory pathway is an amphiboles' pathway."
19. What is the significance of step-wise release of energy in respiration?
20. (a) Draw a diagram of respiratory system and label any four parts of it.
(b) What are alveoli? Mention their role in respiration
21. Gaseous exchanges continue in lungs without interruption even during expiration. Explain.
22. Explain why, Respiration is an exothermic reaction?
23. (a) Describe the mechanism of breathing in human beings.
(b) Differentiate between aerobic and anaerobic respiration. (Any two points).
24. (a) draw a neat diagram of human respiratory system and label the parts.
 - I. That has cartilaginous rings
 - II. That enclosed the vocal cords
 - III. Sheet of mucus that separate the chest cavity from the abdominal cavity.
 - IV. Serves as common passes for food and air
(b).how are the alveoli designed to maximize the exchange of gases. Suggest any two features.

25. Draw a flow chart showing the three different pathways involved In the breakdown of glucose in different organisms. Name the respiratory pigment present in human beings. state the function of rings of cartilage present in our throat.
26. How are oxygen and carbon dioxide transported in human beings? How are lungs designed to maximize the area for exchange of gases?
27. Give reason for the following.
- The glottis is guarded by the epiglottis
 - The alveoli in lungs are covered with blood capillaries.
28. What is the function of the epiglottis in man? Draw a labelled diagram showing the human respiratory system.
29. (a) Draw a neat diagram of excretory system of human beings and label the following :
(i) Kidney (ii) Ureter (iii) Urinary Bladder (iv) Urethra
(b) How is urine produced?
(c) Name two excretory products other than O₂ and CO₂ in plants.
30. (a) Explain in brief the mechanism of circulation of blood in the human body.
(b) "Lymph is another type of fluid involved in transportation." Justify this statement by explaining the process
31. (a) Explain the excretory system in Human beings.
(b) List any four strategies used by plants for excretion ?
32. (a) Draw a schematic representation of movement of water in plants during transpiration and explain it. (b) Explain transport of food and other substances in plants.
33. (c) Diffusion will not be sufficient to provide raw materials in leaves and energy in roots in plants, therefore, a proper system of transpiration is essential. Explain.
34. Draw a labeled diagram of Human Heart. Draw a table to show the functions of any two chambers of Human Heart.
35. Why ventricles have thicker walls than auricles?
36. (a) Draw a sectional view of the human heart and label on it: aorta, pulmonary arteries, vena cava, left ventricle.
(b) Why is double circulation of blood necessary in human beings?
37. how does the blood differ in its components in a mammal when it enters the lungs and when it leaves them.?
38. What happen to glucose , which enters the nephron along with the filtrate during excretion in human being.? State two vital function of kidney.
39. (a) Draw a labeled diagram of excretory system in human beings and label the following:
(i) Left kidney (ii) Renal artery (iii) Urinary bladder (iv) Urethra
(b) Name the functional unit of kidney. (c) Name two nitrogenous wastes released from kidney
40. (a) draw neat diagram of human excretory unit of a human kidney and label the following parts
i. Bowman's capsule ii. Renal artery iii. Glomerulus iv. Collecting duct
(b). give one advantage of having a large number of these highly coiled structures in our kidneys.
(c). mention any two substances which are selectively reabsorbed as the filtrate flows along the tubular part of this unit.
41. (a) describe the structure of a nephron with the help of diagram only .
(b) what are the various step involved in the process of urine formation?

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