Downloaded from www.studiestoday.com

CHAPTER-6

LIFE PROCESSES

SOLVED QUESTIONS

(1) Due to availability of less water, how does the plant cope up with lack of water in desert conditions?
(2) After a vigorous exercise, you may experience cramps in your leg muscles. Why does this happen?
(3) What will happen if carbon monoxide combines with haemoglobin?
(4) Food moves down the gut by peristalsis. Which region of brain controls peristalsis?
(5) Name the pigment present in plants, which can absorb solar energy.
(6) Name the respiratory organs of (i) fish (ii) mosquito (iii) earthworm.
(7) Which of the four chambers of the human heart has the thickest muscular walls?
(8) What will be the outcome if a farmer floods his field everyday?
(9) Which part of visible spectrum is absorbed by chlorophyll pigments?
(10) How does respiration in plants differ from that in animals?
(11) Name the cartilaginous flap which closes the glottis to check the entry of food into it during swallowing.
(12) Which equipment is used to facilitate breathing during serious breathing problems?
(13) Chloroplast are called energy convertors. Explain.
(14) Why is the rate if breathing much faster in aquatic organisms than those of terrestrial organisms?
(15) Why are glomeruli considered as dialysis bags?
(16) Autotrophs synthesise food for the living world. Justify this statement in one sentence only interconnecting autotrophs and heterotrophs.
(17)Veins and arteries carry blood. Which of these carry blood?
a) Away from the heart?
b) Back to the heart?
(18) Which of the organs perform the following functions in humans?
1. Absorption of food.
2. Absorption of water
(19) Name the areas in a woody stem through which respiratory exchange of gases take place.
(20) Tooth enamel is one of the hardest substances in our body. How does it undergo damage due to eating chocolates and sweets?
(21) A certain tissue in a green plant somehow get blocked and the leaves wilted. What was the tissue that got blocked?
(22) Write one feature which is common to each of the following pairs of the term/organs.

i)	glycogen and starch	ii)	chlorophyll and haemoglobin
iii)	gills and lungs	iv)	arteries and veins.

(23) Why doesn't the lungs collapse even after forceful expiration?
(24) The two openings of the pharynx, one leading to trachea and the other leading to oesophagus, lie very close to each other. Yet food we swallow normally does not enter into our trachea. Why?

Downloaded from www.studiestoday.com

Downloaded from www.studiestoday.com

(25) How would it affect the digestion of proteins and carbohydrates if the duodenum of man if there is a blockade in the pancreatic duct?
(26) What do you mean by double circulation of blood?
(27) "If there were no algae there would be no fish in the sea". Comment.

(28)Write the functions of the following in the digestive process:
(i) Bile
(ii) Bicarbonate secreted by the duodenal wall.
(iii) Pancreatic amylase.

(29) Why is the process of diffusion insufficient to meet the oxygen requirement of human beings?

(30) Draw a diagram of human alimentary canal showing duodenum, small intestine, liver and pancreas.

(31) Draw a diagram of the human urinary system and label in it.
a. Kidney
b. Ureter
c. Urinary Bladder
d. Urethra

ANSWERS

Ans-1) They open their stomata at night and stomata remain closed during day time, to conserve moisture.
Ans-2) The sudden build up of lactic acid in our muscles during vigorous, exercise, causes muscular cramps in our leg muscles.
Ans-3) If the haemoglobin binds with carbon monoxide strongly, the oxygen will not be carried with blood leading to death of the organism.
Ans-4) Medulla of hind brain.
Ans-5) Chlorophyll.
Ans-6) Fish - gills
Mosquito – Trachea (air tubes)
Earthworm – moist skin
Ans-7) Right ventricle.
Ans-8) Respiration of plants will be affected because the oxygen present in the interspaces of the soil will be replaced by water.
Ans-9) Blue and Red light
Ans-10) In plants, all parts like the root, stem, leaves, etc., perform respiration individually., while in animals, either the general body surface or specific organs like the skin, gills, lungs, etc., are involved in respiration. The rate of respiration is much slower in plants than in animals. Unlike animals, there is little transport of gases from one part of the plant to another.
Ans-11) Epiglottis
Ans-12) Ventilator
Ans-13) Chloroplasts are called energy convertors because they trap the solar energy and convert it into chemical energy.
Ans-14) The aquatic organisms obtain oxygen dissolved in water. As compared to air, the availability of oxygen in water is fairly low. Hence, the aquatic organisms have to breathe faster as compared to the terrestrial organisms.

Downloaded from www.studiestoday.com

Downloaded from www.studiestoday.com

Ans-15) The main function performed by the glomeruli is selective filtration. They filter small molecules containing glucose, salts, urea, and liquid serum. Etc. The large molecules such as proteins remain in blood. Thus, glomeruli of the kidneys function as dialysis bags.

Ans-16) The food producers are autotrophs and all the heterotrophs consume the food produced by the autotrophs directly or indirectly.

Ans-17) a) Arteries carry blood away from the heart.

b) Veins carry blood back to the heart.

Ans-18)

1. Absorption of food takes place in small intestine.
2. Large intestine

Ans-19) In woody stem, the bark has lenticels for gaseous exchange.

Ans-20) The acid is formed in the mouth after a sugary food (chocolates and sweet) has been taken. This acid lowers the pH in the mouth. Tooth decay starts when the pH of acid formed in the mouth falls below 5.5. This is because then the acid becomes strong enough to attack the enamel of our teeth and corrode it.

Ans-21) The tissue that got blocked may be xylem. It is through the xylem that water and minerals absorbed by roots from the soil are transported to the leaves and other parts of the plant. So, if xylem is blocked, the leaves will not get the nourishment and will get wilted.

Ans-22)

i) Carbohydrate (food)
ii) Pigments.
iii) Respiratory organs.
iv) Blood vessels.

Ans-23) Even after forceful expiration to the maximum capacity, some amount of air remains in the lungs, known as residual volume. So, the lungs doesn't collapse even after forceful expiration.

Ans-24) The food does not enter into trachea because during swallowing, the aperture leading to trachea (glottis) gets covered by a cartilaginous flap called epiglottis and the food has no other passage except going into the oesophagus.

Ans-25) Duodenum is the region where the pancreatic juice secreted by the pancreas enters. The enzymes pancreatic amylase and trypsin helps in the digestion of carbohydrates and proteins. Thus, if there is a blockade, the digestion of carbohydrates and proteins gets affected.

Ans-26) Blood passes through the heart twice for each cycle of the body.

Ans-27) Algae produce O_2 as a result of photosynthesis. This oxygen is utilised by the fishes in the sea for carrying out respiration. If there were no algae, no oxygen would have been produced. Thus, fishes might have died.

Ans-28)

1. Bile: It is secreted by the gall bladder and it emulsifies the fats into the smaller droplets for their easy digestion.
2. It provides alkaline medium in the duodenum which is needed for the action of pancreatic enzymes of different food components for their digestion.
3. Pancreatic amylase enzyme digests starch and changes it into maltose.

Ans-29) The process of diffusion for carrying O_2 to all parts of the body is not sufficient for larger multicellular organisms like human beings. Hence, respiratory pigment haemoglobin takes up oxygen from the air and carry it to all the parts of our body through blood.

Ans-30) Textbook Page No. 99, Figure 6.6

Downloaded from www.studiestoday.com

Downloaded from www.studiestoday.com

Ans-31) Figure 6.13 Page 110 NCERT

QUESTION BANK FOR PRACTICE

1. Which fluid in the human body wets the internal organs?

2. Where does the blood absorb oxygen in the human body?
3. Name the two parts of the plant through which gaseous waste products are released into the air?
4. Why do the walls of the trachea not collapse when there is less air in it?

5. Normally a vein opens into a large vein or into the heart but does not end in capillaries. Which one or more veins in humans is/are exceptions to this rule?
6. Give reason for – The lung alveoli are covered with blood capillaries.
7. Why is blood called liquid connective tissue?
8. Structure of leaf is complementary to its functions. Explain.

9. Bile juice does not contain any digestive enzymes, yet it is essential for digestion, why so? Explain.
10. How do each of the following factors affect the productivity in the process of photosynthesis?
    1. Temperature. 2. Water. 3. Carbon dioxide.
11. Why is it necessary to separate oxygenated and deoxygenated blood in living organisms?
12. What substance/substances are transported in plants by
    (1) Xylem vessels and tracheids?
    (2) Sieve tubes (of phloem)?
13. Why is the inner wall of alimentary canal not digested although the digestive enzymes can digest all the materials that make cells?
14. Explain why the rate of photosynthesis in plants is low both at low and high temperatures?
15. Why is CO_2 mostly transported in the dissolved form in our blood than O_2?
16. Small intestine in the site for complete digestion of carbohydrates, proteins and fats. Write down the changes happen to the food in the small intestine before its absorption.
17. Plants absorb water from the soil. How does this water reach the tree tops? Explain in detail.
18. Where does aerobic break down of pyruvate take place in a living cell? What are the end products?
19. Hydrochloric acid creates an acidic medium which facilitate the action of protein digesting enzyme in the stomach. Name the enzyme and give any three other functions served by the acid.
20. Why is anaerobic respiration produce less energy compared to aerobic respiration?
21. What is root pressure?
22. In which direction does lymph flow?
23. Name the organ system which is responsible for excretion and osmoregulation?

Downloaded from www.studiestoday.com

Downloaded from www.studiestoday.com

24. What is the composition of lymph?
25. Differentiate between afferent and efferent arterioles?
26. Name the vestigial part of human alimentary canal.
27. Name the respiratory pigment of blood in mammals.
28. How does oxygen reach the cells in insects?
29. Respiration is a vital process for all organisms. Explain.
30. What will happen if a diaphragm of a person gets ruptured in an accident?
31. What is the source of oxygen in photosynthesis?
32. How would non-secretion of hydrochloric acid in our stomach affect food digestion?
33. Why does leaf appear green?
34. What is the role of light in photosynthesis?
35. Write about the major glands associated with the alimentary canal of man and mention their functions.
36. How does the butter in your food get digested and absorbed in the body and explain.
37. Why is the rate of photosynthesis more during a bright sunny day as compared to a cloudy day?
38. If all the green plants are removed from the earth life cannot be sustained. Comment.
39. Why is digestion essential for living beings?
40. Draw a diagram to show the internal structure of human heart. Label 6 parts in all including at least three valves.

www.studiestoday.com

Downloaded from www.studiestoday.com