

Science

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(Chapter - 6) (Life Processes) (Practice Test 1)

(Class X)

Time: 60 minutes

M. M.: 25

General Instructions:

- This question paper contains four sections - A, B, C, and D. Each part is compulsory.
- Section - A has 4 MCQ of one mark each.
- Section - B has 5 questions of two mark each.
- Section - C has 2 questions of three mark each.
- Section - D has 1 question of five mark.
- There is no negative marking.

Section - A

1. Life processes essential for living organisms are _____.
(A) Nutrition
(B) Digestion
(C) Circulation
(D) All of these
2. The intake of all forms of food and nutrients in normal quantity and absorption of the nutrients in the body is termed as _____.
(A) Reproduction
(B) Nutrition
(C) Metabolism
(D) Transportation
3. Which are the components not necessary for photosynthesis?
(A) Water
(B) Oxygen
(C) Soil
(D) Chlorophyll
4. From the options given below which comes under the category of heterotrophic nutrition?
(A) Animals
(B) Humans
(C) both a and b
(D) Plants

Section - B

5. How are fats digested in our bodies? Where does this process take place?
6. How do plants exchange gasses?
7. List two factors which decide direction of diffusion of oxygen and carbon dioxide.
8. What are the strategies of plants to get rid of their wastes?
9. Why do we feel pain or cramps in muscles after a vigorous exercise?

Section - C

10. What is sequence of steps in photosynthesis? How is it different in desert plants and those in temperate regions?
11. What is the composition of urine? Are glucose and proteins normally present in urine? Why? How is volume of urine regulated?

Section - D

12. How are water and minerals absorbed and transported in the plants?

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Hints and Answers

Section - A

1. (D) **Explanation:** Nutrition, digestion and circulation are important for all the living organisms to maintain their life cycle.
2. (B) **Explanation:** Absorption of nutrients help in the maintaining the body health.
3. (C) **Explanation:** Water, oxygen and soil and chlorophyll are essential for plants to make their own food.
4. (C) **Explanation:** Animals and Humans depend upon others for their food so they are called heterotrophs.

Section - B

5. Fats are first emulsified with the help of bile salts followed by their breakdown in fatty acids and glycerol due to the action of lipase. All these events take place in first part of small intestine-duodenum. Saprophytic
6. Plants exchange gasses through stomata. Large intercellular spaces ensure that each cell is in contact with air. Carbon dioxide and oxygen are exchanged here.
7. Environmental conditions and requirement of the plants decide direction of diffusion of oxygen and carbon dioxide.
8. They throw away oxygen and water vapour through stomata.
 - Some wastes like gums, oil and resins may be stored in old xylem or wood in stem.
 - Some wastes may be stored in leaves and bark and shed off from time to time.
 - Roots can also throw some wastes.
9. Actively metabolizing cells of an extremely active skeletal muscle, during heavy exercise, carry oxidation in the anaerobic condition inside the muscle cell, we feel pain after a vigorous exercise because of production of ATP by anaerobic respiration in leg muscles.

Section - C

10. Chloroplast (chlorophyll), on exposure to light energy, becomes activated by absorbing light energy, and splits water (photolysis of water) to oxygen and hydrogen. Hydrogen reduces CO_2 , and synthesizes glucose.
 - In plants of temperate regions, stomata open during day to take in CO_2 and release O_2 .
 - Desert plants open stomata at night to check excessive loss of water hence sequence of steps of photosynthesis are slightly different.
 - These plants take up carbon dioxide at night and prepare an intermediate which is acted upon by the energy absorbed by the chlorophyll during the day.
11. The urine contains mainly water, various salts, urea and uric acid. No, they are not present in urine as glucose is reabsorbed by nephron while protein are not filtered from blood in glomerulus in a healthy kidney. Volume of urine is regulated by
 - The amount of excess water.
 - The amount of dissolved waste in blood.

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Section - D

12. Transpiration is the process of removal of water vapors from the aerial parts of a plant, mainly through stomata in the leaves.

- There are two conducting tissues of plants: first is xylem and second is phloem. Tracheids and vessels which are two kinds of elements of xylem.
- Tracheids are found in all vascular plants. They are spindle shaped, have only pits and are not very efficient.
- Vessels are found in flowering plants, are tube like, have perforation plates and pits making them more efficient.
- When loss of water in vapor occur from leaves of plants due to transpiration, deficit of water is created in the leaves. Evaporation of water molecules from the cells of a leaf creates a suction force which pulls water from the xylem cells.
- Water and minerals dissolved in it move up to leaves from root through tracheids and vessels, pulling water and minerals upward through xylem elements-ascent of sap. Thus transpiration helps in upward movement of water from roots to leaves.
- The roots of a plant absorb water and dissolved substances from the soil, which is needed by the aerial parts of the plants. As such these substances are to be transported from roots up to stem, leaves and flowers.



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