Science

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(Chapter – 6) (Life Processes) (Practice Test 2)

(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. The organisms which eat both plants and animals are called _____.
   (A) Herbivore
   (B) Carnivore
   (C) Omnivore
   (D) Heterotroph
2. How many carbon atoms are present in glucose?
   (A) 6
   (B) 12
   (C) 4
   (D) 1
3. Light reactions are carried out in the presence of _____.
   (A) Carbon dioxide
   (B) Oxygen
   (C) Light
   (D) Dark
4. The mode of nutrition in fungus is _____.
   (A) Autotrophic
   (B) Saprophytic
   (C) Holozoic
   (D) Parasitic

Section - B

5. List two ways in which plants can get rid of the wastes.
6. What is the role of acid and mucus in stomach?
7. Which digestive secretion does not contain any enzyme but is important? Discuss.
8. What is the role of valves in veins?
9. How is the small intestine designed to absorb digested food?

Section - C

10. (A). What is the role of mucus in stomach? (B). What are the two vital functions of human kidney?
11. (A). How is oxygen and carbon dioxide exchanged between blood and tissue? How are the gasses transported in human being? (B). What is hemoglobin?

Section - D

12. Describe the mechanism of gaseous exchange in tissues and lungs.

OR

How is oxygen and carbon dioxide transported in human being?

OR

How is oxygen and carbon dioxide transported in human being? Explain clearly how the air is inhaled and exhaled during breathing in humans.

Hints and Answers

Section - A

1. (C) **Explanation**: The organism which eat both plants and animals are called omnivores.
2. (A) **Explanation**: The formula of glucose is $C_6H_{12}O_6$.
3. (C) **Explanation**: Light reactions are carried out in the presence of light which helps in performing photosynthesis.
4. (B) **Explanation**: Fungus depends on the dead decaying matter for their nutrition so they are called saprophytic.

Section - B

5. They can throw gasses and excess water through stomata through diffusion. They can store wastes like gums and resins in old xylem tissue (wood).
6. It kills germs in food and provides acidic medium for the action of pepsin enzyme to digest the proteins in stomach. Mucus protects the wall of stomach from the action of acid and pepsin.
7. Bile juice from liver. It contains bile salts which are necessary for emulsification of fats. It means breaking down large fat drops to very fine droplets so that lipase can act upon them easily.
8. They prevent the back flow of blood especially when it moves against gravity and under low blood pressure.
9. Walls of small intestine has finger like projection called villi to increase surface area. The food is absorbed by villi and brought into blood. Fat is brought into lymph vessel.

Section - C

10. (A). To protect the stomach lining from the action of acid and pepsin.
(B). The two vital functions of human kidney are:
   - **Excretion** - Removal of toxic wastes like urea, uric acid.
   - **Osmoregulation** - The process of maintaining the right amount of water and proper ionic balance in body. It is done by controlling the amount of water and salts reabsorbed by nephron - tubules.

11. (A). Exchange of gasses in tissues occurs through diffusion. Oxygen is carried as oxyhaemoglobin from lungs to tissues. It dissociates and carbon dioxide diffuses out into blood from tissues. It is transported in dissolved form and reaches lungs where again it diffuses to alveoli.
(B). Respiratory pigment: Hemoglobin is a red coloured protein present in red blood cells. Hemoglobin has affinity for O_2

Section - D

12. **Exchange of gasses in tissues**:
Most of oxygen is carried by hemoglobin in blood. On reaching the tissues, it gets diffused into the cells as it is in higher concentration than in the cells. The carbon dioxide, which is formed in the cells, gets accumulated there in higher concentration as compared in the blood, now diffused into the blood.
The CO_2 mostly dissolved in blood plasma reaches the lungs, from where it is expelled out during exhalation.
Mechanism of Inhalation: The thoracic cavity expands when diaphragm and rib muscles contract. The thorax moves upwards and outwards, increasing the volume inside thoracic cavity. The air pressure in the cavity decreases, hence the air rushes into the lungs through nostrils, trachea and bronchi.
Mechanism of Exhalation: Exchange of gasses between alveolar sacs and blood occurs and air having CO_2 enters the alveoli. The thoracic cavity comes back to its original size as diaphragm muscles relax. Air containing CO_2 is exhaled out through bronchi, trachea and nostrils.