CBSE Test Paper-03

Chapter 06 Life Processes

1. Raisins swell up after being placed them in a beaker containing water for sometime because: **(1)**

   a. the concentration of water in the cell sap is the same as that of water in the beaker
   b. water inside the raisins passes out of them when placed in a beaker of water
   c. the concentration of water in the cell sap is higher than the water in the beaker.
   d. the concentration of water in the cell sap is lower than the water in the beaker

2. Match the following with correct response. **(1)**

(1) Saliva	(A) sucrose
(2) Gastric juice	(B) Pepsin
(3) Pancreatic juice	(C) Amylase
(4) Succuss entricus	(D) Trypsin

   a. 1-A, 2-C, 3-B, 4-D
   b. 1-C, 2-B, 3-D, 4-A
   c. 1-B, 2-D, 3-A, 4-C
   d. 1-D, 2-A, 3-C, 4-B

3. Three students Jagdeep, Gautam and Gurdev get 10 gm raisins equally. They soaked the raisins in distilled water at room temperature. They removed the raisins after 35 minutes. 1 hour 15 minutes and 2 hours respectively. Who got more percentage absorption of water? **(1)**

   a. Gurdev
   b. Gautam
   c. Jagdeep, Gautam and Gurdev
   d. Jagdeep

4. Which is the vestigial part of human alimentary canal? **(1)**

a. epiglottis
b. pineal gland
c. thymus gland
d. Vermiform appendix

5. If the water absorbed by soaked raisins is 50% then the weight of raisins before soaking in water W_1 and the weight of raisins after soaking in water W_2 might have been **(1)**

a. W1 = 30g and W2 = 50 g
b. W1 = 50g and W2 = 100 g
c. W1 = 5 g and W2 = 25 g
d. W1 = 20g and W2 = 30 g

6. Name the exchange of gases between the blood and the air at the respiratory surface. **(1)**

7. When do viruses show movements? **(1)**

8. Which of these blood vessel carry less nitrogenous waste - renal vein or the renal artery? **(1)**

9. After drinking access of cold drink, a person suffered from acidity. Explain? **(1)**

10. What is the advantage of four chambered of heart? **(3)**

11. The pulse rate increases due to physical exercise. Why? **(3)**

12. A girdled tree dies if the girdle is wide and is not filled up. comment. **(3)**

13. State the function of Bowman's capsule and glomerulus. **(3)**

14. Describe the structure and functioning of nephrons. **(5)**

15. Draw the diagram of part of leaf from which transpiration takes place. Explain stomatal or foliar transpiration. **(5)**

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Answers

1. c. the concentration of water in the cell sap is higher than the water in the beaker.

   Explanation: Due to osmosis, water moves from lower concentrated solution to higher concentrated solution.

2. b. 1-C, 2-B, 3-D, 4-A

   Explanation:

   - An amylase is an enzyme that catalyses the hydrolysis of starch into sugars. Amylase is present in the saliva of humans and some other mammals.
   - Pepsin is the powerful enzyme in gastric juice that digests proteins such as those in meat, eggs, seeds, or dairy products.
   - Three enzymes found in pancreatic juice, called trypsin, chymotrypsin and carboxypeptidase, are the pancreatic enzymes that complete the digestion of proteins. Because proteins are held together by peptide bonds, these enzymes work by breaking peptide bonds.
   - The ileum and the jejunum parts of the small intestines secrete a combination of several enzymes called succus entericus. Succus entericus contains sucrose which is used in the breakdown of sucrose into fructose and glucose.

3. a. Gurdev

   Explanation: Absorption of water increases with time upto its maximum limit.

4. d. Vermiform appendix

   Explanation: Vestigial organs can be defined as an organ that once was useful in an animal's evolutionary past, but that now is useless or very close to useless. As vermiform appendix plays no significant function in humans, so it is considered as a vestigial organ.

5. d. W_1 = 20g and W_2 = 30 g

Explanation:

$$\begin{aligned}&\frac{w_2 - w_1}{w_1} \times 100\\ &= \frac{30 - 20}{20} \times 100\\ &= \frac{10}{20} \times 100\\ &= 50\%\end{aligned}$$

6. External respiration

7. When the virus is outside the living body they as they are dead but by entering the living body they start showing molecular movement.

8. Renal vein carries deoxygenated but purified blood (has less nitrogenous waste) away from the kidney.

9. Cold drinks contain carbon dioxide dissolved in them under pressure. some amount of the gases escape when a bottle of cold drink is opened while a portion of it remain dissolved. Carbon dioxide dissolved in water from a weak acid, carbonic acid. consumption of excess of cold drink accumulation of carbonic acid in the stomach which is responsible for the development of acidity.

10. The right and left parts are separated by a septum to prevent oxygenated and deoxygenated blood from mixing. This is particularly advantageous in warm-blooded animals such as birds and mammals who constantly use energy to maintain their body temperature.

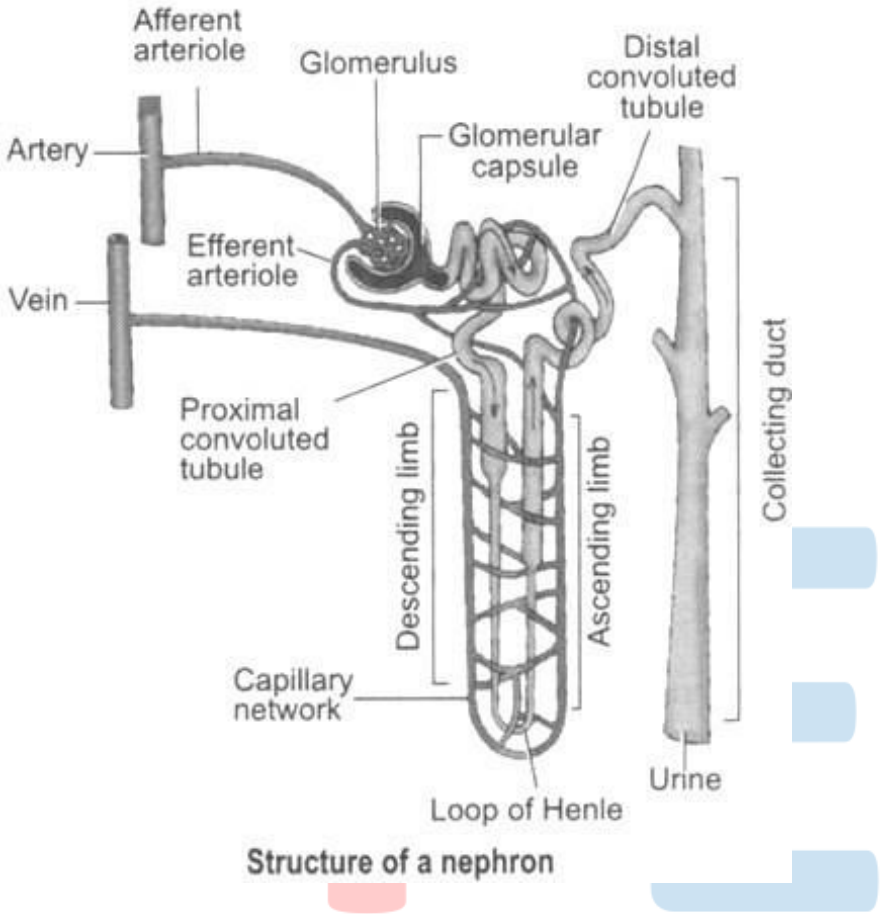
11. The arteries expand as the ventricles pump this blood out of the heart, and this is known as a pulse. Fundamentally, exercise will increase the need for additional food, known as energy, and oxygen in the body. The breathing will increase to rid the body of carbon dioxide and to provide more oxygen, and the pulse will increase to provide the extra food and oxygen needed.

12. Girdling removes bark containing phloem from the trunk region. Food manufactured foliage does not reach the roots which requires the same as they are always growing. In the absence of food supply, roots starve and stop absorbing water. The foliage wilts and the plants dies.

13. Bowman's capsule and glomerulus have semipermeable walls. The glomerulus, is a tuft of capillaries contained in Bowman's capsule. The water and dissolved substances

(wastes and useful) are filtered into the Bowman's capsule and from here they are sent into the tubule. Thus, both the structures act as filtering apparatus.

14. Structure of Nephron: Nephron is the structural and functional unit of kidney.



Structure of a nephron

i. It consists of a long coiled tubule differentiated into proximal tubule, loop of Henle and distal tubule. The latter opens into the collecting tubule.
ii. At the proximal end of the nephron lies a double-walled cup-shaped structure called Bowman's capsule.
iii. The Bowman's capsule contains a bundle of blood capillaries which is called glomerulus.
iv. In the glomerulus, the blood that comes in through afferent arteriole is drained out through efferent arteriole.

Functions of Nephron:

i. Filtration: Filtration of blood takes place in Bowman's capsule from the capillaries of glomerulus. This takes place under high pressure. The filtrate passes into the tubular part of the nephron. This filtrate contains glucose, amino acids, urea, uric

acid, salts and major amount of water.

ii. Selective Reabsorption: As the filtrate flows along the tubule, useful substances such as glucose, amino acids, salts and water are selectively reabsorbed into the blood by capillaries surrounding the nephron tubule. The amount of water reabsorbed depends on the need of the body and also on the amount of wastes to be excreted.

iii. Tubular secretion: Certain substances which are harmful and not needed by the body like ammonia, potassium, creatinine and hydrogen ions are secreted from the capillary blood into the lumen of distal tubule. This is called tubular secretion.

15. **Stomatal transpiration**: The epidermis has minute pores called stomata. Each stoma is surrounded by two specialised epidermal cells called guard cells. The guard cells are kidney-shaped, process chloroplasts and less elasticity. Adjacent to the epidermal cells, their walls are thin and elastic. They are thickened near the openings. The stomata remain open in light and close in darkness. Guard cells control the opening or closing of stomata.

The stomata form the chief pathway of transpiration. Though the relative total area of the stomatal pore is 1-2% of the total area of the leaf, more transpiration takes place through these stomata only.