CBSE Test Paper-04

Chapter 06 Life Processes

1. Which of the following does not respire through lungs? **(1)**

    1. Duck
    2. Frog
    3. Whale
    4. Tadpole

2. An apparatus was set-up to show that germinating seeds release carbon dioxide during respiration. which observation out of the following should be made to get correct results ? **(1)**

    a. See if the KOH in the test tube has absorbed CO_2 released by germinating seeds
    b. Check the change in the level of water present in the beaker
    c. Check if CO_2 is coming into the delivery tube
    d. Carefully observe if there is any change in the size of germinating seeds

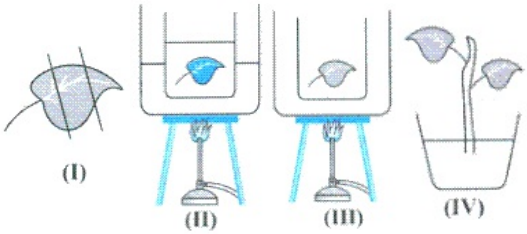
3. In the experiment to prove that light is necessary for photosynthesis, which one of the following is not required ? **(1)**

    a. Water
    b. KOH
    c. Iodine
    d. Alcohol

4. The rate of photosynthesis is maximum in **(1)**

    a. Green light
    b. Red light
    c. Brown light
    d. Yellow light

5. The figure which does not illustrate any of the steps of the experiment to show that light is necessary for photosynthesis is **(1)**



a. I
b. I, II, and IV
c. I and III
d. III

6. What is the function of amylase? **(1)**
7. What are resins and gums? **(1)**
8. What is the quantity of blood in human body? **(1)**
9. Write one function of valves in the walls of veins. **(1)**
10. Differentiate between Pulmonary artery and Pulmonary veins. **(3)**
11. How many pairs of salivary glands are there in humans ? Where do they open? **(3)**
12. How is respiration different from breathing. **(3)**
13. Give the chemical equation of photosynthesis. **(3)**
14. Describe the flow of blood through the heart of human beings. **(5)**
15. i. Draw the structure of a nephron and label the following parts on it. **(5)**
    a. Renal artery
    b. Bowman's capsule
    c. Glomerulus
    d. Collecting duct
    ii. Name four substances in the initial filtrate which are selectively reabsorbed as the filtrate floor along the tubule.

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Answers

1. d. Tadpole
   Explanation: A tadpole lives under water so it only has one way of gas exchange (through the gills). First, the tadpoles open their mouth to let water enter. Then, the water moves into the gills which contain small membranes called lamella.
2. b. Check the change in the level of water present in the beaker
   Explanation: The level of water in U-shaped delivery tube dipped in water of the beaker rises.
3. b. KOH
   Explanation: The leaf has to be boiled in alcohol in a water bath and to be tested with iodine for starch.
4. b. Red light
   Explanation: The main factors affecting rate of photosynthesis are light intensity, carbon dioxide concentration and temperature.The wavelength of light is also important. PSI absorbs energy most efficiently at 700 nm and PSII at 680 nm. Light with a higher proportion of energy concentrated in these wavelengths will produce a higher rate of photosynthesis. The wavelength of red light is maximum.
5. d. III
   Explanation: The experiment does not require heating of leaf in dried condition.
6. Amylase converts starch into maltose.
7. Resins and gums are storage wastes of plants.
8. 5-6 litres.
9. The valves in the walls of veins prevent the backflow of blood.
10.

Pulmonary artery	Pulmonary veins
1) Pulmonary artery arises from the right ventricle.	1) Pulmonary veins arise from the lungs.
2) It carries deoxygenated or impure blood to the lungs for purification.	2) They carry the oxygenated or pure blood to the left auricle.
3) The pulmonary artery is provided with semilunar valves at the base in the heart.	3) The openings of pulmonary veins into the heart are not guarded by valves.
4) The pulmonary artery splits into two branches, one for each lung.	4) The pulmonary vein splits into four branches, two for each lung.
5) The pulmonary artery has a relatively thick wall with elastic muscle layer.	5) The muscle layer of the pulmonary vein's wall is much thinner than this in the pulmonary artery.
6) The heart pumps the blood into the pulmonary arteries at high pressure.	6) In the pulmonary veins the blood pressure is lower than in pulmonary arteries.

11. There are three pairs of salivary glands in human beings. They open into the buccal cavity.
12. Differences between breathing and respiration

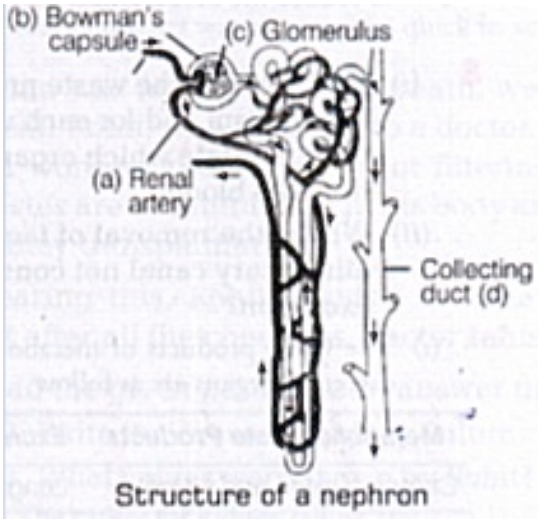
Breathing	Respiration
1) It is ventilation or bringing in of oxygenated air and giving out deoxygenated air.	1) Respiration of animals includes breathing, gaseous exchange and catabolic breakdown of food.
2) Breathing is a physical and voluntary process.	2) Respiration is a chemical and involuntary process.
3) Breathing does not liberate energy.	3) It liberates energy.
4) It is restricted to organs where gaseous exchange occurs between blood and atmospheric air.	4) Respiration involves every living cell of the body.

5) Breathing takes place in the respiratory organs called as lungs.	5) Respiration takes place in the cells.
6) Breathing involves respiratory organs and the cells called as alveoli.	6) Respiration involves cells in the body an their organelles.

13. A chemical equation of photosynthesis is

$$6CO_2 + 6H_2O \xrightarrow[Sunlight]{Chlorophyll} C_6H_{12}O_6 + 6O_2$$

14. The heart is the major organ of our body which continuously pumps oxygen and nutrient-rich blood throughout our body to sustain life. As the heart beats, it pumps blood through a system of blood vessels, called the circulatory system.
The blood enters the heart through two large veins, the inferior and superior vena cava, emptying oxygen-poor blood from the body into the right atrium. As the atrium contracts, blood flows from your right atrium into your right ventricle through the open tricuspid valve. When the ventricle is full, the tricuspid valve shuts. This prevents blood from flowing backward into the right atrium while the ventricle contracts. As the ventricle contracts, blood leaves the heart through the pulmonic valve, into the pulmonary artery and to the lungs, where it is oxygenated. The oxygenated blood then returns to the heart through the pulmonary veins. And finally, the oxygenated blood from the left ventricle is pumped through the aorta to the whole body.
15. i.



Structure of a nephron

ii. Glucose, amino acids, salts and adequate amount of water are reabsorbed initially after ultrafiltration.