

PRACTICE PAPER 01 (2026-27)

CHAPTER 05: LIFE PROCESSES

SUBJECT: SCIENCE

MAX. MARKS : 40

CLASS : X

DURATION : 1½ hrs

General Instructions:

- (i) All questions are compulsory.
- (ii) This question paper contains **20** questions divided into five Sections A, B, C, D and E.
- (iii) **Section A** comprises 10 MCQs and Assertion-Reason questions of **1 mark** each. **Section B** comprises 4 Very Short Answer questions of **2 marks** each. **Section C** comprises 3 Short Answer questions of **3 marks** each. **Section D** comprises 1 Long Answer question of **5 marks**. **Section E** comprises 2 Case Study Based questions of **4 marks** each.
- (iv) There is no overall choice. Internal choice is provided in Section E.
- (v) Use of calculators is not permitted.

SECTION - A

Questions 1 to 10 carry 1 mark each.

1. Which one of the following is **not** required by a plant for photosynthesis?
(a) Carbon dioxide (b) Water
(c) Chlorophyll (d) Oxygen
2. Amoeba takes in its food with the help of
(a) cilia covering the whole cell
(b) a specific spot on the cell called mouth
(c) temporary finger-like extensions of the cell surface
(d) villi
3. Which of the following correctly pairs an enzyme with the food it acts upon?
(a) Pepsin – Starch (b) Salivary amylase – Starch
(c) Lipase – Proteins (d) Trypsin – Fats
4. Which statement about bile juice is correct?
(a) It is secreted by the pancreas.
(b) It contains enzymes that digest proteins.
(c) It makes the food alkaline and emulsifies fats.
(d) It is stored in the stomach.
5. In yeast, during fermentation, pyruvate is converted into
(a) lactic acid (b) carbon dioxide and water
(c) ethanol and carbon dioxide (d) glucose
6. The respiratory pigment in human beings and its location are
(a) chlorophyll – plasma (b) haemoglobin – red blood corpuscles
(c) haemoglobin – white blood corpuscles (d) haemoglobin – platelets
7. Which chamber of the human heart pumps oxygen-rich blood to the rest of the body?
(a) Right atrium (b) Right ventricle
(c) Left atrium (d) Left ventricle

8. Translocation of food in plants takes place through

- (a) xylem vessels
- (b) tracheids
- (c) sieve tubes with companion cells
- (d) root hairs

In the following questions 9 and 10, a statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as:

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A).
- (b) Both (A) and (R) are true but (R) is not the correct explanation of (A).
- (c) (A) is true but (R) is false.
- (d) (A) is false but (R) is true.

9. **Assertion (A):** The rate of breathing in aquatic organisms is much faster than in terrestrial organisms.

Reason (R): The amount of dissolved oxygen in water is fairly low compared to the amount of oxygen in air.

10. **Assertion (A):** Arteries have thick, elastic walls.

Reason (R): Veins have valves that ensure blood flows in only one direction.

SECTION - B

Questions 11 to 14 carry 2 marks each.

11. A potted plant with variegated leaves (green and white patches) is kept in a dark room for three days and then in sunlight for six hours. A leaf is boiled in water, then in alcohol, and tested with iodine solution.

- (a) Why was the plant kept in the dark for three days? Why was the leaf boiled in alcohol?
- (b) What is observed after the iodine test, and what does it prove?

12. (a) Why do herbivores such as cows have a longer small intestine than carnivores such as tigers?

- (b) How is the small intestine designed to absorb digested food?

13. (a) What is the role of the rings of cartilage present in the throat?

- (b) Why do the lungs always contain a residual volume of air during the breathing cycle?

14. Plants do not have special excretory organs. List four ways in which plants get rid of their waste products.

SECTION - C

Questions 15 to 17 carry 3 marks each.

15. (a) What is transpiration? State two of its functions.

- (b) How is water moved upward in the xylem of a tall tree during the day and at night?

16. (a) What is lymph? How is it formed?

- (b) How does lymph differ from blood plasma?
- (c) State two functions of lymph.

17. The gastric glands are present in the wall of the stomach.

- (a) Name the three substances they release and state the role of each.
- (b) How is the exit of food from the stomach regulated?

SECTION - D

Question 18 carries 5 marks.

- 18.** (a) Trace the path of blood through the four chambers of the human heart, starting from the blood returning from the lungs.
(b) What is double circulation? Why is separation of oxygenated and deoxygenated blood necessary in birds and mammals?
(c) Why do ventricles have thicker muscular walls than atria? What is the role of valves in the heart?
(d) How is circulation in fishes different?

SECTION - E (Case Study Based Questions)

Questions 19 and 20 carry 4 marks each.

- 19.** Study the flow chart showing how glucose is broken down by different pathways in various organisms, and answer the questions.

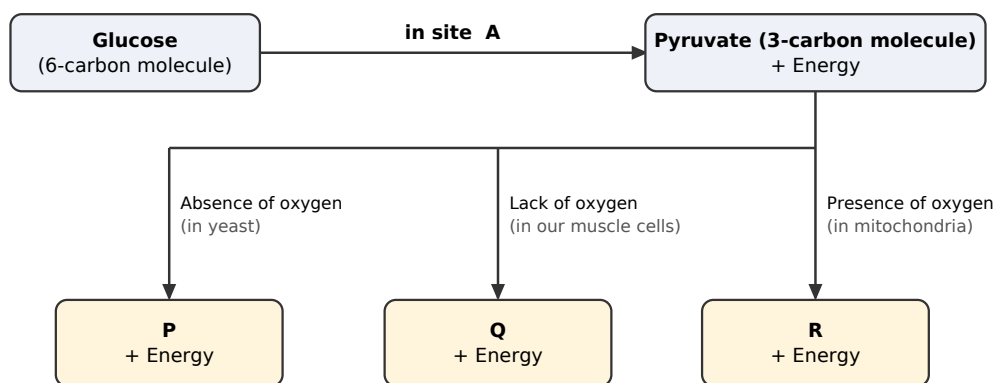


Figure: Break-down of glucose by various pathways

- (a) Name the site A where glucose is broken down into pyruvate, and the products P formed in yeast. **(1)**
(b) Identify Q. Why do we sometimes get muscle cramps after sudden heavy exercise? **(1)**
(c) Name the products R and this type of respiration. Which pathway releases the most energy, and in what form is this energy stored for use by the cell? **(2)**

OR

- (c) Give two differences between aerobic and anaerobic respiration, and name one organism that uses the anaerobic mode. **(2)**

- 20.** Read the passage and answer the questions that follow.

Each human kidney contains large numbers of filtration units packed close together. In each unit, a cluster of thin-walled blood capillaries is associated with a cup-shaped end of a coiled tube that collects the filtrate. In a healthy adult, about 180 L of initial filtrate is formed daily, but only a litre or two of urine is actually excreted. When the kidneys fail due to infection, injury or restricted blood flow, poisonous wastes accumulate in the body, and the patient may be put on an artificial kidney (haemodialysis).

- (a) Name the filtration unit of the kidney and the cup-shaped structure that collects the filtrate. **(1)**
(b) Why is the volume of urine excreted so much smaller than the volume of initial filtrate? **(1)**
(c) Explain how an artificial kidney works. State one way in which it differs from a natural kidney. **(2)**

OR

- (c) On what factors does the amount of water re-absorbed in the kidney depend? Trace the path of urine from the kidney until it leaves the body. **(2)**

.....