# Summative Assessment - Term I

**Model Question Paper** Time : 1½ hours

Class : 9 Biology Score : 40 Marks

**Instructions**

- The first 15 minutes are cool-off time.
- This time can be used for reading the questions and planning the answers.
- Write answers only according to the instructions and questions.
- While writing the answers, consider the score and time.

**Answer the questions 1 to 4. 1 score each.** **(4x1=4)**

1. Which is the correct illustration related to the transport of substances in animals ? (1)

i) External Environment → Extracellular fluid → Cell Membrane → Cytoplasm

ii) External Environment → Cell Membrane → Cytoplasm → Extracellular fluid

iii) External Environment → Cytoplasm → Cell Membrane → Extracellular fluid

iv) External Environment → Extracellular fluid → Cytoplasm → Cell Membrane

2. "The liver plays a major role in digestion even though it does not produce any enzymes". Why?

Identify the necessary statements to answer this question and choose the correct option. (1)

(a) The liver produces bile, which helps break down fats into smaller molecules.
(b) After digestion, the nutrients that mix with the blood are stored in the liver.
(c) The components that help to convert proteins into amino acids are present in the bile produced by the liver.

**Options:**
i) (a), (b) are correct
ii) (b), (c) are correct
iii) (a), (c) are correct
iv) (a), (b), (c) are correct

3. Analyse the statement and the reason and choose the correct answer from the options. (1)

**Statement**: The light phase (light reaction) occurs only in the presence of light.
**Reason**: Light energy is required for the splitting of water into hydrogen and oxygen.

Choose the correct option:
i) The statement is correct, and the reason is also correct. The reason is the correct explanation of the statement.
ii) The statement is correct, and the reason is also correct, but the reason is not the correct explanation of the statement.
iii) The statement is correct, but the reason is incorrect.
iv) The statement is incorrect, but the reason is correct.

4. Where does digestion begin in Hydra? (1)
i) In the tentacles
ii) In the mouth
iii) In the body cavity
iv) Inside the food vacuole

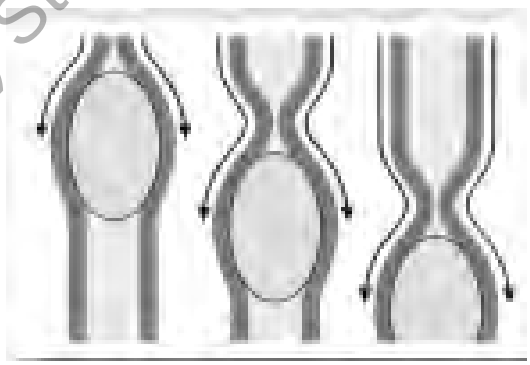
**Answer questions 5 to 11. 2 score each.** **(7x2=14)**

5. The food habits of two individuals are given below.

**Person 1**: Fried snacks, fried fish, egg, pappadam
**Person 2**: Puttu, fruits, milk, leafy vegetables
(a) Whose food habit is harmful to heart health? (½)

(b) Relate your finding with any three diseases that affect the circulatory system and explain them. (1½ )

6. (A). Observe the illustration and answer the questions.



(i) Identify the digestive process indicated in the illustration. (½)
(ii) Which part of the digestive system does this process take place in? (½)
(iii) How does this process help in the mechanical digestion of food? (1)

OR

(B). A fluid found between the double layers surrounding the heart protects it from external shocks.
(i) Identify this fluid. (1)
(ii) Write another function of this fluid. (1)

7. The digestion process is the same in both Hydra and Amoeba. This is the answer given by a student to the teacher's question. Evaluate the student's response and record your opinion. (2)

8. (A). A presentation slide prepared for a seminar conducted in connection with **International Mangrove Conservation Day** includes the ecological services of mangrove forests. Write any two additional ideas that can be included in this presentation. (2)

| **July 26**<br>**International Mangrove Conservation Day** |
|---|
| Mangrove Forest<br>• A storehouse of biodiversity.<br>• A source of fish wealth.<br>•<br>• |

OR

(B). **"Marine pollution is a serious threat faced by ecosystems"** – Explain the significance of this statement. (2)

9. **"In plants, substances enter the cytoplasm by moving through the cell wall and the intercellular spaces"** – Explain this statement by including other pathways that help substances enter plant cells. (2)

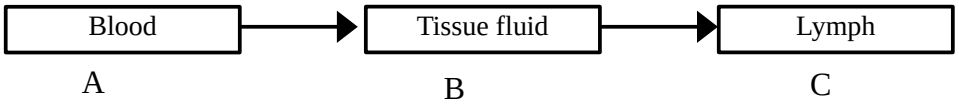
10. Hints related to a process that helps in the transport of substances through the plasma membrane are given below. Analyse them and answer the following questions. (2)
Hints:

- Glucose and ions enter the cytoplasm through this process.
- This process does not require energy.

**(i)** Identify the process. What special assistance is required for large molecules like glucose to enter the cell through this process?

**(ii)** What is the similarity between this process and the processes by which water and oxygen enter the cytoplasm?

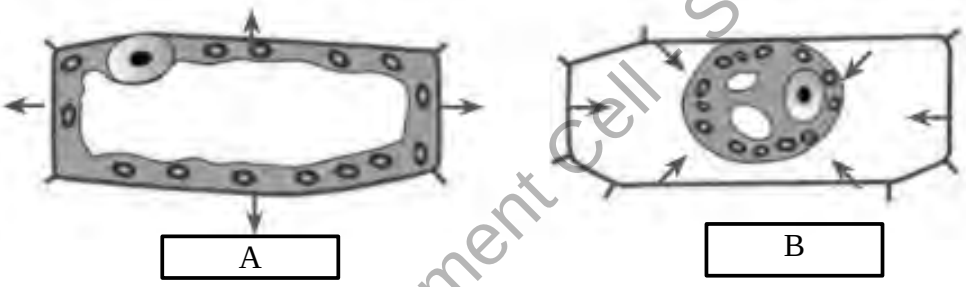
11. Observe the illustration and answer the questions. (2)




**(i)** How is **C** formed from **B**?
**(ii)** What are the structural differences between **A** and **C**?

**Answer questions 12 to 17. 3 score each.** **(6x3=18)**

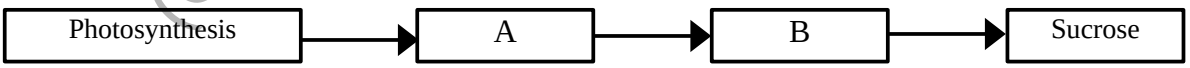
12. (A). Figures of **Rhoeo leaf cells** placed in **concentrated salt solution** and **pure water** are given below. Analyse them and answer the questions. (3)




(i) Which of the two images, **A** or **B**, shows the cell placed in **concentrated salt solution**? Explain the reason for your answer.
(ii) Explain the process responsible for these changes in the cells.
(iii) How does the **plasma membrane** help in the exchange of substances?

OR

(B). Analyse the illustration given below related to the formation of various nutrients as a result of **photosynthesis** and answer the questions. (3)




(i) Identify the nutrients **A** and **B**.
(ii) What is the **need for the conversion** of A into B?
(iii) **"Photosynthesis directly influences the survival of life on Earth."**
Evaluate this statement by explaining the various nutrients formed from sucrose.

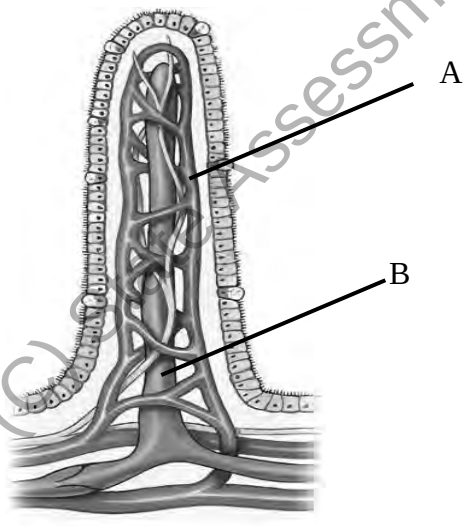
13. Normally, when food is swallowed, it does not enter the nasal cavity or windpipe. However, if a person talks while swallowing, food may sometimes enter the windpipe. **Explain the scientific reasons behind both of these situations.** (3)

14. (A). Redraw the diagram given below and label the parts according to the hints provided. (3)

(a) The hard and non-living part of the tooth
(b) The connective tissue containing calcium

OR

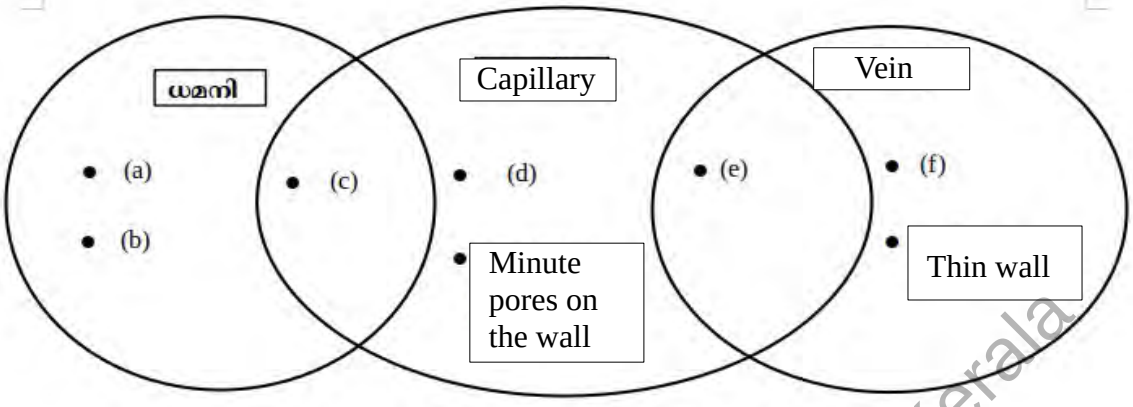
(B) Observe the illustration and answer the questions (3)




i) Identify the parts labelled **A** and **B**.
ii) Write the names of the simple nutrients absorbed into **each of the parts A and B**.

15.Complete the **Venn diagram** appropriately by including the items given in the box.

(3)




Wall with a single layer of cells only.

Valves are absent.

Carries blood towards the heart.

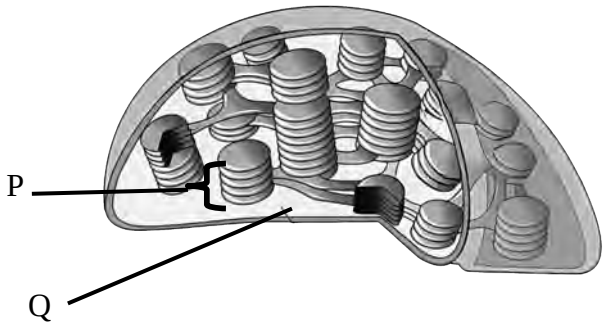
Blood flows at low pressure and speed.

Carries blood away from the heart.

Wall with elasticity.

**16.** "Photosynthesis is both a catabolic and an anabolic process at the same time." **Evaluate this statement by relating it to the processes involved in photosynthesis.** (3)

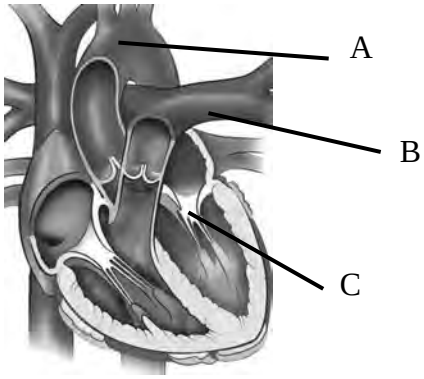
17. An illustration showing the **structure of a chloroplast** is given. Observe it and answer the questions. (3)



a) Identify the parts labelled as **P** and **Q**.
(b) Write **two structural features** of part **P**.
(c) How do the functions that occur in **P** help to support the functions that take place in **Q**?

**Write answer to question number 18. (4 score)** **(1x4=4)**

18. (A). Observe the illustration and answer the questions. (4)




(a) Identify the parts labelled **A** and **B**.
(b) Compare **A** and **B** based on the **oxygen content** in the blood flowing through them and the **direction of blood flow**.
(c) Identify the part labelled **C** and write its **function**.

OR

(B). A table containing hints about certain **digestive juices** is given below. Analyse it and answer the questions. (4)

| Hints | Digestive juice |
|---|---|
| Completely digests **fats** into **fatty acids** and **glycerol** | A |
| Breaks down **carbohydrates** into **glucose**, **fructose**, and **galactose** | B |
| Contains **hydrochloric acid** | C |

i) Identify the digestive juices **A** and **B**.
ii) With reference to **protein digestion**, write the **enzymes** present in digestive juices **B** and **C**, along with their **functions**.
iii) Write the **function of hydrochloric acid** present in the digestive juice **C**.