

Class : IX

Biology

Time : 1½ Hours

Score : 40

Instructions

- First 15 minutes is given as cool off time. You may use the time to read the questions and plan your answers.
- Read the questions carefully and answer the questions.
- Keep in mind the score and time while answering the questions.
- Choices are given for questions 6, 10, 14, 16 and 18.

Answer all questions from 1 to 4. 1 score each.**(4 x 1=4)**

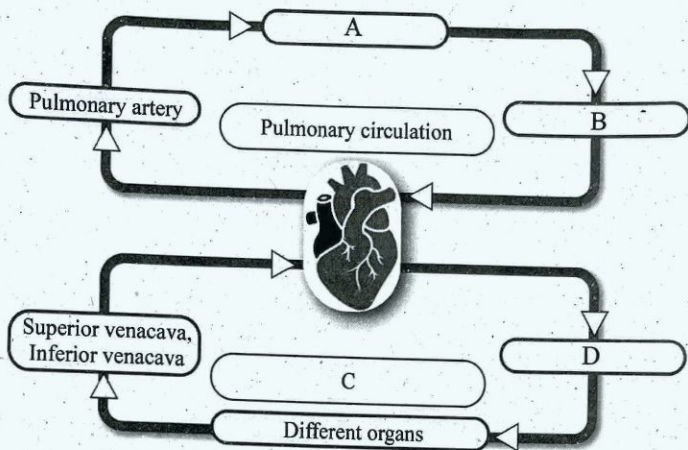
1. Analyse the pairs given in columns A and B, and select the correct pair from the options..

(1)

A. Biomolecule	B. Example
P. Carbohydrate	i. DNA
Q. Proteins	ii. Oils
R. Nucleic acid	iii. Cellulose
S. Lipid	iv. Antibody

- a. P-iv, Q-iii, R-ii, S-i
- b. P-iii, Q-iv, R-i, S-ii
- c. P-ii, Q-i, R- iv, S-iii
- d. P-ii, Q-iii, R-iv, S- i
2. Examine the statements and choose the correct one from the options given below. **(1)**
- i) The production of glucose by combining carbon dioxide and water is anabolism.
- ii) The production of protein by joining amino acids is catabolism.
- iii) Enzymes are molecules that help to increase the rate of biological activities.
- iv) Testosterone and estrogen are enzymes.
- a. i) correct; ii), iii), iv) incorrect
- b. i), ii) correct, iii), iv) incorrect
- c. i), iii) correct; ii), iv) incorrect
- d. i), iv) correct; ii), iii) incorrect
3. Analyse the statement and reason, and choose the correct answer. **(1)**
- Statement : Food is converted into a paste form in the stomach.
- Reason : Trypsin in the gastric juice converts the food into a paste form.
- a) Statement correct, reason incorrect.
- b) Statement incorrect, reason correct.
- c) Statement and reason are correct.
- d) Statement and reason are incorrect.

4. Analyse the illustration, identify A, B, C, and D, then choose and write the correct answer. (1)



- A – Pulmonary vein, B – Lungs, C – Aorta, D – Systemic circulation
- A - Systemic circulation, B – Aorta, C – Lungs, D - Pulmonary vein
- A – Aorta, B –Pulmonary vein, C – Systemic circulation , D - Lungs
- A – Lungs, B –Pulmonary vein, C – Systemic circulation, D – Aorta

Answer questions 5 to 11 (2 scores each)

(7 x 2 = 14)

5. Examine the statement and answer the questions.

Plants store the glucose produced during photosynthesis in the form of starch.

- What is the need for such storage? (1)
- In what form is starch stored in fruits and leguminous plants? (1)

5. A. **Not just food and oxygen, plants provide countless services in our daily life.**

Explain with examples.

(2)

OR

- B. On July 26 – Mangrove Conservation Day, the most tagged post on social media is given below:

Mangrove forests – Nature's gift

As a biology student, write your comment/opinion supporting the post by including two scientific ideas. (2)

7. Based on the indicators, answer the following questions.

Indicators:

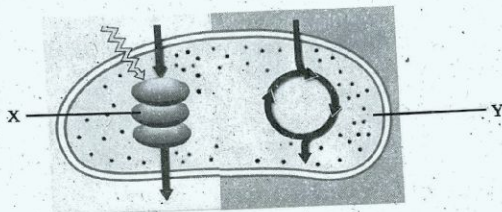
- i. Through the strong contractions of the muscles in the stomach and small intestine, food is broken down into smaller particles.
- ii. Complex nutrients are broken down into simpler components through the action of enzymes.

- a) Which digestive processes are indicated by 'i' and 'ii' respectively?
- b) Explain the role of enzyme pepsin in the process mentioned in 'ii'.

(1)

(1)

8. Observe the illustration and answer the following questions.



- a) Identify and write the phases of photosynthesis that occur in parts 'X' and 'Y'.
- b) How does the product formed in 'Y' influence the survival of living organisms?

(1)

(1)

9. Although both the trachea and the oesophagus open into the pharynx, food does not enter the trachea during swallowing. How is this made possible?

(2)

10. A. Certain characteristics of blood vessels are given. Analyse them and answer the following questions.

- i. Thick, elastic wall.
- ii. Wall formed of single layer of cells.
- iii. Thin wall; valves are seen.

- a) Write the names of the blood vessels 'i' and 'ii'.

(1)

- b) What is the function of the valves seen in the blood vessel mentioned in 'iii'?

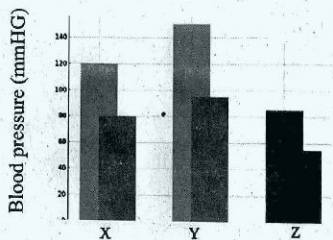
(1)

OR

- B) RBC is the blood cell that plays a major role in the exchange of respiratory gases. What are the other two types of blood cells? Explain their functions.

(2)

11. The blood pressure test results of individuals 'X', 'Y', and 'Z' are illustrated. Analyse the graph and answer the questions.

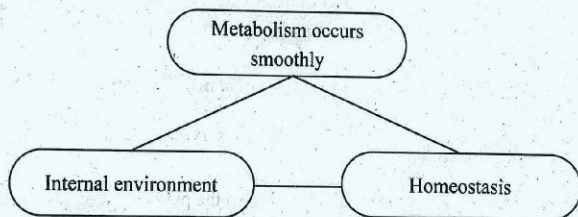


- Which individual has normal blood pressure? Justify. (1)
- Prepare a note on the lifestyle and dietary habits that individual 'Y' should follow. (1)

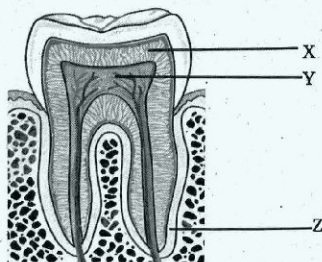
Answer questions from 12 to 17. 3 scores each.

(6 x 3=18)

12. Analyse the illustration and answer the questions.



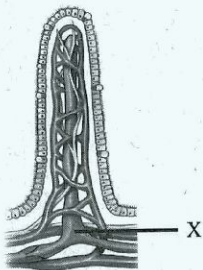
- What constitutes the internal environment in animals and plants? (1)
 - What is the importance of maintaining the stability of the internal environment? (2)
13. Redraw the diagram and answer the questions.



Redraw the diagram

- Identify and label the parts 'X' and 'Y'. (1)
- Write the function of the part labelled 'Z'. (1)

14. A) Analyse the illustration of villus and answer the following questions.

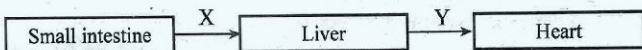


- Which nutrients are absorbed into the part labelled 'X'? (1)
- Explain how the structure of the villi helps to make the process of absorption efficient. (2)

OR

- B. Observe the illustration of portal circulation and answer the questions.

- Which blood vessels are indicated by 'X' and 'Y'? (1)



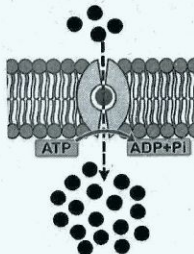
- Explain how glucose and amino acids absorbed from the small intestine reach different parts of the body. (2)

15. The heading of a poster displayed at the primary health centre is given below.

Eating too much fatty foods can affect heart health.

- Write any two health issues that justify the heading. (2)
- Write any two habits that should be followed to maintain health of heart. (1)

16. A. Observe the illustration and answer the questions.

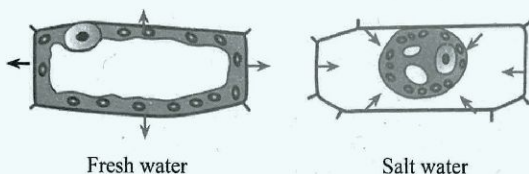


- Identify the process of material transport. (1)
- Write any two characteristics of this process. (2)

OR

- B. In plants, substances enter the cytoplasm from the external environment through different pathways. List the pathways. (3)

17. A thin outer layer of Rhoen leaf was placed in fresh water and another in saltwater. After one hour, they were observed under a microscope and prepared an image. Analyse it and answer the questions.



- a) What is the process shown in the image? (1)
b) How did this process cause changes in the cells? (2)

4 scores for question number 18.

(1x4=4)

18. A. Answer the following questions appropriately in relation to the cardiac cycle.
- a) During ventricular systole, into which blood vessels does the blood enter? (1)
b) When the ventricles contract, blood does not flow back into the atria. Why? (1)
c) Mention the location and function of the SA node, also known as the pacemaker. (2)

OR

- B. Answer the following questions related to the protective mechanisms of the heart.

- a) Which is the double-layered membrane that covers the heart? (1)
b) What is the fluid found in between these layers? Explain its function. (2)
c) "It is not just the membrane that protects the heart." Write a note in response to this statement. (1)