Class : IX

Biology

Time : 1½ Hours
Score : 40

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.
- Question numbers 6, 10, 13, 16 and 18 are given choices.

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

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

   Statement : Osteoporosis is the condition in which parts of bones get damaged and the density of bones deteriorates.

   Reason : The stretching or breaking of ligaments.

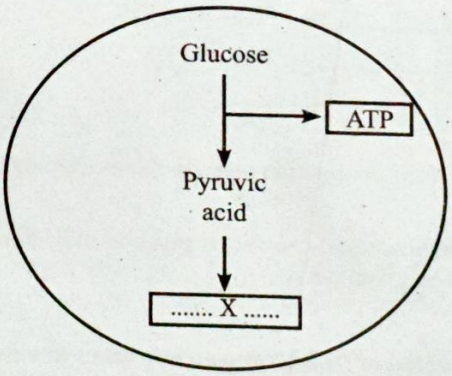
   a) Statement correct , Reason incorrect

   b) Statement incorrect , Reason correct

   c) Both the statement and reason are correct

   d) Both the statement and reason are incorrect

2. Analyse the process illustrated below, which occurs when dough is leavened using yeast. Select the products indicated by 'X' from the options. (1)



   a) Lactic acid, Carbon dioxide

   b) Lactic acid, Oxygen

   c) Alcohol, Carbon dioxide

   d) Alcohol, Oxygen

3. Analyse the pairs written in columns A and B, and write the correct one from the options. (1)

Column A	Column B
P. Salivary amylase	i. digest the lipid into fatty acid and glycerol
Q. Proteases	ii. partially digest the proteins
R. Trypsin	iii. convert proteins into amino acids
S. Lipase	iv. begins the digestion of starch

a) P-iv, Q-iii, R-ii, S-i b) P–ii, Q–iv, R–i, S–iii

c) P–iii, Q–i, R–iv, S–ii d) P–i, Q–ii, R–iii, S–iv

4. Examine the statements and choose the correct one from the options given below. (1)

i. Water is lost as water vapour through the pore called hydathode.

ii. Oxygen and carbon dioxide are expelled through the pores called lenticels.

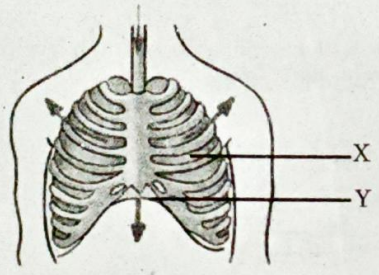
iii. Solid wastes are excreted in plants through the shedding of ripened leaves and fruits.

a) i correct; ii, iii incorrect b) i, ii correct; iii incorrect

c) i incorrect; ii, iii correct d) i, ii, iii correct

Answer questions from 5 to 11. Each carries 2 score. **(7x2 = 14)**

5. A stage of ventilation is illustrated. Analyse the illustration and answer the question given below. (2)



Identify 'X' and 'Y', and explain how their contraction helps in the movement of air into the lungs.

6. A. The characteristic feature of the process of osmosis is given as indicator. Based on it, explain the situations given below. (2)

Indicator:

Water molecules move from a region of its higher concentration to a region of its lower concentration through a semi permeable membrane.

a) A mango shrinks when it is put in salt.

b) Seeds swell when placed in pure water.

OR

B. Explain the reasons for the given statements based on the transport of substances.

a) The fragrance of flowers can be sensed from a distance. (1)

b) Movement of glucose molecules into the cell. (1)

7. A part of the graffiti from a primary health centre is given.

> Drinking insufficient quantity of water and not urinating at regular intervals affect the health of the kidneys.

Do you agree with this statement? Why? (2)

8. Observe the images and answer the following questions.

X

Y

a) How does the structural framework differ in these organisms? (1)

b) Write the different functions performed by the structural framework in the organism 'Y'. (1)

9. Both photosynthesis and respiration occurs simultaneously in the mesophyll cells of leaves during daytime. How does this help in the process of gaseous exchange in plants? (2)

10. A. Write the answers to the following questions based on the process of photosynthesis.

a) What is the necessity of splitting of water during photosynthesis? (1)

b) What are the materials required for the reaction that takes place in the stroma of the chloroplast? (1)

OR

B. Answer the following questions based on the storage of nutrients in plants.

a) The product formed as a result of photosynthesis cannot be stored in the same form. Why? (1)

b) This product is stored in plants as different nutrients. What are they? (Write any two.)(1)

11. A part of the conversation of a doctor who led a class in a health seminar is given below. Analyse it and answer the questions.

> Growth during childhood and adolescence is related to the development of the skeletal system. It is essential that calcium reaches the bones to ensure their hardness and strength. In addition, children should engage in games that expose them to sunlight.

a) Which food items should be included in diet to ensure the availability of calcium? (1)

b) Why is it necessary for children to engage in games that expose them to sunlight? (1)

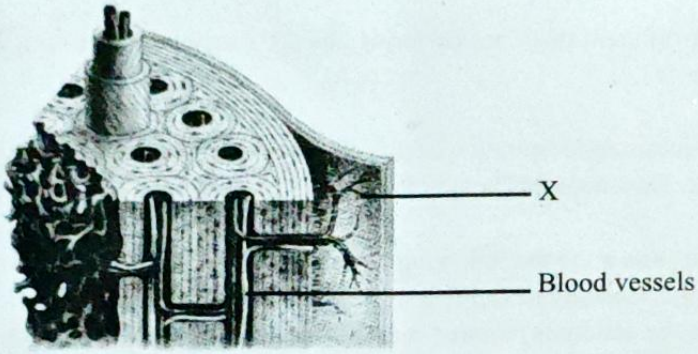
Answer questions 12 to 17. 3 scores each **(6 x3=18)**

12. The result of a person's blood pressure test is shown in the picture. Evaluate this person's blood pressure and answer the questions.

a. What does each number shown on the screen indicate in relation to blood pressure? (1)

b. How is this person's blood pressure different from normal, and what is the name of this condition? (2)

13. A. Observe the illustration showing the structure of a bone and answer the questions.



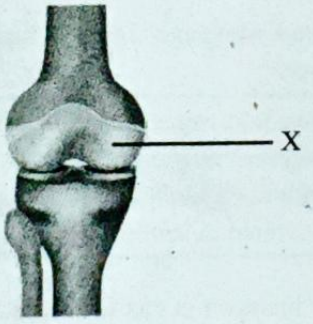
a) Identify the part labelled as 'X' and write its characteristic feature. (1)

b) What are the components that provide hardness and strength to bones? (1)

c) Write any two functions of osteoblast cells. (1)

OR

B. Observe the given diagram and answer the questions.



a) Identify the part labelled as 'X' and write its characteristic feature. (1)

b) What is the function of 'X' in the part shown in the picture. (1)

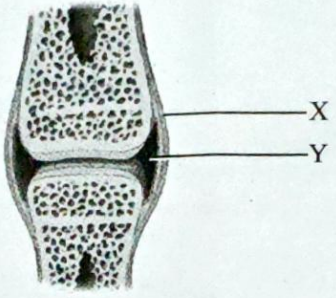
c) 'X' grows comparatively slower than other tissues. Why? (1)

14. Analyse the statements about the vascular tissues in plants and answer the given questions.

A. ***Form the small veins of leaves.***
B. ***Appear like long pipes.***

a) Which cells are mentioned in statements 'A' and 'B'? (1)
b) What are the processes that help in the transport of substances through these cells? (1)
c) Why do the cells mentioned in statement 'B' appear like long pipes? (1)

15. Redraw the diagram and answer the questions.



Redraw the diagram. (1)
a) Identify and write the names of parts labelled as 'X' and 'Y'. (1)
b) Write the function of the part labelled 'X' (1)

16 A. Prepare a note comparing glycolysis and Kreb's cycle based on the given indicators. (3)

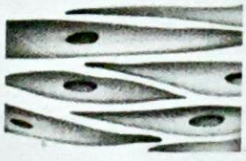
Indicators:
- Part of the cell where the processes takes place.
- Substances that take part in the chemical reactions.
- Requirement of oxygen.

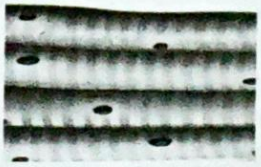
OR

B. Answer the following questions related to the transport of respiratory gases.

a) Explain the role of haemoglobin in the transport of oxygen. (1)
b) Write two methods by which carbon dioxide is transported. (2)

17. The pictures of muscles observed by a child under a microscope are given below.

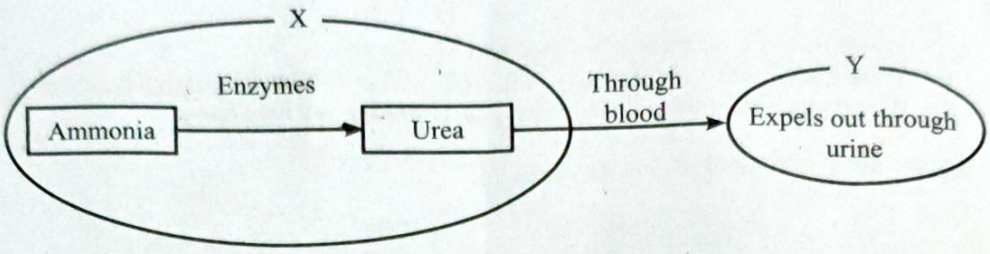

P


Q

a) Identify and name the muscles 'P', 'Q'. (1)
b) Write two characteristics that helped to identify them. (1)
c) Which of these muscles can be controlled according to one's will? Write examples of the body parts where it is found. (1)

Answer the question 18. It carries 4 scores. **(1x4 = 4)**

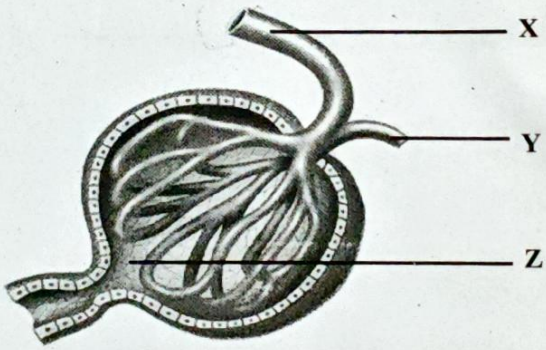
18 A. Analyse the illustration and answer the questions.



a) What are the organs indicated as 'X' and 'Y'? (1)
b) How is ammonia converted into urea? (1)
c) What are the processes that help in the formation of urine from blood? (1)
d) Why are all the components of the glomerular filtrate, which is intially formed from blood not found in urine? (1)

OR

B. Analyse the illustration and answer the questions.



a) Write the names of 'X' and 'Y'. (1)
b) What is the fluid formed in the part labelled C ? How does it get converted into urine? (1)
c) How does the difference in the diameter of X and Y help in the formation of this fluid ? (1)
d) What is the difference between the blood in the renal artery and the blood in the renal vein? (1)