

1 Name the tissues in plants responsible for:

- (a) transport of water and mineral salts;
- (b) transport of carbohydrates;
- (c) primary growth.

(3 marks)

2 State the importance of the following processes that take place in the nephron of a human kidney:

- (a) ultrafiltration: (1 mark)
- (b) selective reabsorption. (1 mark)

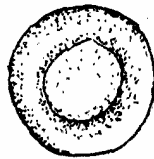
3 (a) Name a disease of the liver whose symptom is jaundice. (1 mark)

(b) State the causative agent of:

(i) cholera; (1 mark)

(ii) candidiasis. (1 mark)

4 The diagrams below show a red blood cell that was subjected to a certain treatment.



At start



At the end of experiment

(a) Account for shape of the cell at the end of the experiment. (2 marks)

(b) Draw a diagram to illustrate how a plant cell would appear if subjected to the same treatment. (1 mark)

5 (a) State **two** factors that affect enzymatic activities. (2 marks)

(b) Explain how **one** of the factors stated in (a) above affects enzymatic activities. (1 mark)

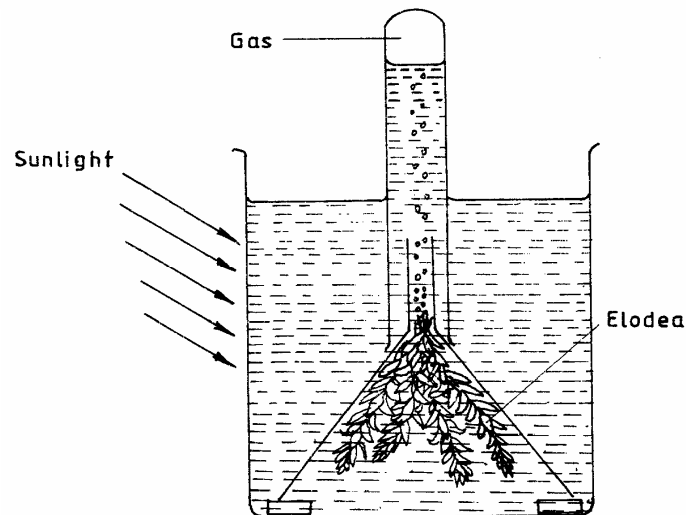
- 6 (a) What is meant by non-disjunction? (1 mark)
- (b) Give **two** examples of continuous variation in humans. (2 marks)
- 7 (a) What is a fossil? (1 mark)
- (b) How does convergent evolution occur? (3 marks)

- 8 The diagram below shows a stage in mitosis in a plant cell.

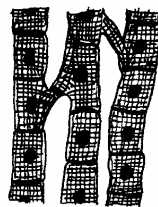


- (a) Name the stage of mitosis. (1 mark)
- (b) Give **two** reasons for your answer in (a) above. (2 marks)
- (c) Name the part of the plant from which the cell used in the preparation was obtained. (1 mark)
- 9 Give **three** factors that determine the amount of energy a human being requires in a day. (3 marks)
- 10 (a) Name the antigens that determine human blood groups. (2 marks)
- (b) State the adaptation that enables the red blood cells to move in blood capillaries. (1 mark)
- 11 (a) What is homeostasis? (1 mark)
- (b) Name **three** processes in the human body in which homeostasis is involved. (3 marks)
- 12 State **two** functions of the endoplasmic reticulum. (2 marks)
- 13 (a) Name the part of the retina where image is formed. (1 mark)
- (b) State **two** characteristics of the image formed on the retina. (2 marks)

- 14 Describe the **three** characteristics of a population. (3 marks)
- 15 Explain what happens when there is oxygen debt in human muscles. (2 marks)
- 16 The diagram below represents a set up that was used to investigate a certain process in a plant.



- (a) State the process that was being investigated. (1 mark)
- (b) State a factor that would affect the process. (1 mark)
- 17 Account for the following phases of a sigmoid curve of growth of an organism:
- (a) lag phase; (1 mark)
- (b) plateau phase. (1 mark)
- 18 How is the epidermis of a leaf of a green plant adapted to its functions? (2 marks)
- 19 The diagram below represents a tissue obtained from an animal.



- (a) Identify the tissue. (1 mark)
- (b) State the function of the tissue named in (a) above. (1 mark)
- 20** (a) What is single circulatory system? (1 mark)
- (b) Name an organism which has single circulatory system. (1 mark)
- (c) Name the opening to the chamber of the heart of an insect. (1 mark)
- 21** (a) What is seed dormancy? (1 mark)
- (b) Name a growth inhibitor in seeds. (1 mark)
- 22** State **two** characteristics of aerenchyma tissue. (2 marks)
- 23** The diagram below shows a human tooth.



- (a) Identify the tooth. (1 mark)
- (b) How is the tooth adapted to its function? (1 mark)
- (c) State the role of the following vitamins in the human body:
- (i) C (1 mark)
- (ii) K (1 mark)
- 24** Name the sites where light and dark reactions of photosynthesis take place. (2 marks)
- Light reaction
- Dark reaction

- 25** Giving a reason in each case, name the class to which each of the following organisms belong: (4 marks)

Bean plant

Reason

Bat

Reason

- 26** State **one** use of each of the following excretory products of plants:

(a) colchicine; (1 mark)

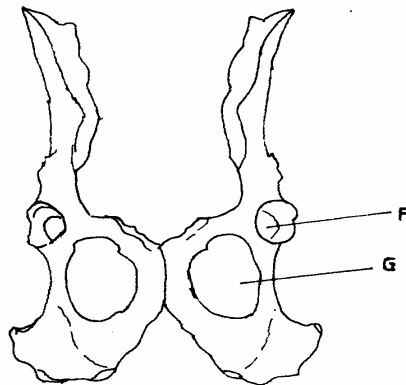
- 27** Explain how anaerobic respiration is applied in sewage treatment. (1 mark)

- 28** (a) State the mode of asexual reproduction in yeast. (1 mark)

(b) Distinguish between protandry and protogyny. (2 marks)

- 29** State a function of amniotic fluid. (1 mark)

- 30** The diagram below shows two fused bones of a mammal.



- (a) Identify the fused bones. (1 mark)

(b) Name the

(i) bone that articulates at the point labelled F (1 mark)

(ii) the hole labelled G. (1 mark)