

29.4 BIOLOGY (231)

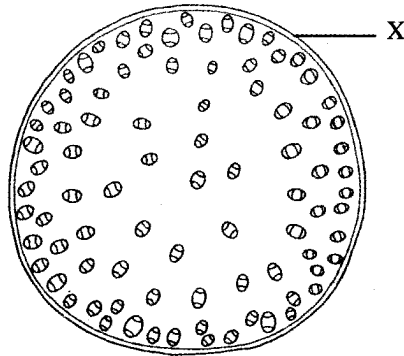
29.4.1 Biology Paper 1 (231/1)

1 State the name given to the study of:

(a) the cell; (1 mark)

(b) microorganisms. (1 mark)

2 The diagram below shows a transverse section of a plant organ.



(a) Name the plant organ from which the section was obtained. (1 mark)

(b) (i) Name the class to which the plant organ was obtained. (1 mark)

(ii) Give a reason for your answer in (b)(i) above. (1 mark)

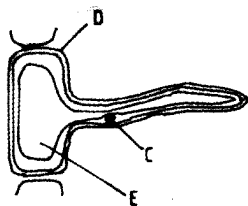
(c) Name the part labelled X. (1 mark)

3 State the functions of:

(a) Ribosomes; (1 mark)

(b) Lysosomes. (1 mark)

4 The diagram below shows a specialised plant cell.



(a) (i) Name the cell. (1 mark)

(ii) Name the parts labelled **D** and **E**. (2 marks)

D

E

(b) State the function of the part labelled **C**. (1 mark)

5 State **three** ways in which a respiratory surface is adapted to its function. (3 marks)

6 State **one** function for each of the following:

(a) Cerebellum; (1 mark)

(b) Medulla oblongata. (1 mark)

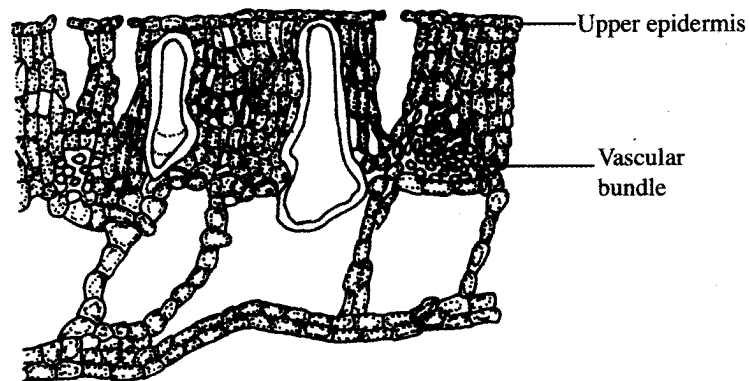
7 Distinguish between haemolysis and plasmolysis. (2 marks)

8 State **three** external differences between chilopoda and diplopoda. (3 marks)

9 State **two** ways in which chloroplasts are adapted to their function. (2 marks)

10 State **two** advantages of hybrid vigour. (2 marks)

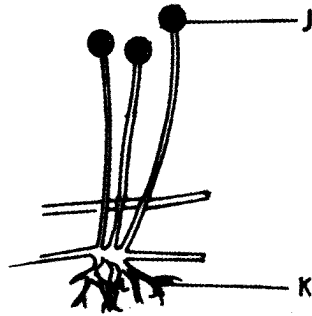
11 The diagram below shows a transverse section of a leaf.



(a) Name the habitat of the plant from which the leaf was obtained. (1 mark)

(b) Give **two** reasons for your answer in (a) above. (2 marks)

12 The diagram below illustrates the structure of bread mould.



(a) Name the part labelled J. (1 mark)

(b) State the functions of the structure labelled K. (2 marks)

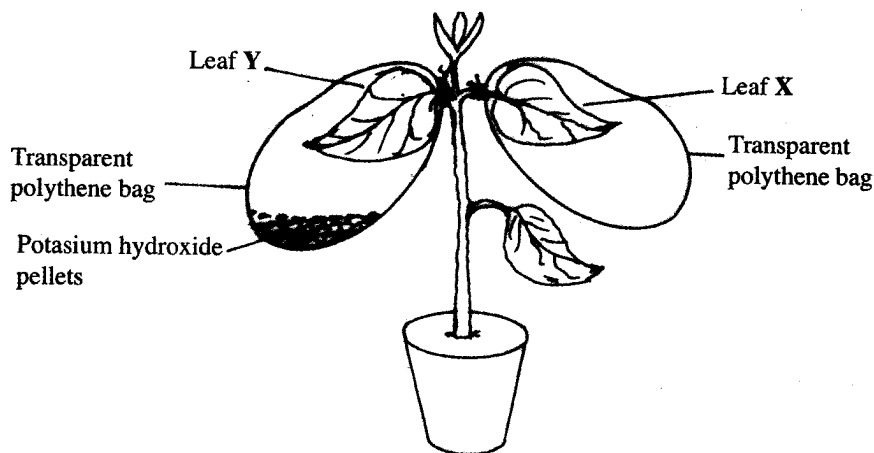
13 What is meant by the following terms?

(a) Habitat; (1 mark)

(b) Ecosystem. (1 mark)

14 Explain why it is not advisable to be in a poorly ventilated room with a burning charcoal stove. (3 marks)

15 A potted plant was kept in the dark for 48 hours. Two leaves X and Y were treated as shown in the diagram below.



The experimental set-up was kept in sunlight for 6 hours after which a starch test was carried out on the two leaves.

(a) What were the results of the starch test on leaves **X** and **Y**? (2 marks)

X

Y

(b) Give reasons for your answers in (a) above. (2 marks)

16 What is the role of bile salts in digestion in humans? (2 marks)

17 The following is the dental formula of a certain mammal:

$$i \frac{0}{3} \quad c \frac{0}{1} \quad pm \frac{3}{3} \quad m \frac{3}{3}$$

(a) State the likely mode of feeding for the mammal. (1 mark)

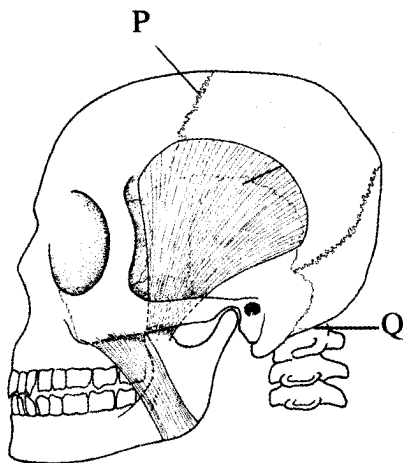
(b) Give a reason for your answer in (a) above. (1 mark)

18 Give **two** reasons why animals have specialised organs for excretion as compared to plants. (2 marks)

19 State the changes that occur in arterioles in the human skin during thermoregulation. (2 marks)

20 State **two** advantages of internal fertilization in humans. (2 marks)

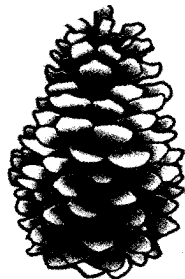
21 The diagram below represents part of the human skeleton.



(a) Name the part labelled **P**. (1 mark)

(b) (i) Name the bone that articulates with the part labelled **Q**. (1 mark)

- (ii) What type of joint is formed between the part labelled **Q** and the bone named in (b)(i) above? (1 mark)
- 22** What is the function of the following structures in the human reproductive organs?
- (a) Fallopian tubes. (1 mark)
- (b) Epididymis. (1 mark)
- (c) Scrotal sac. (1 mark)
- 23** Explain **three** ways in which red blood cells are adapted to their function. (3 marks)
- 24** (a) State **two** ideas proposed by Lamarck in his theory of evolution. (2 marks)
- (b) Why is Lamarck's theory not acceptable? (1 mark)
- 25** State **three** factors that contribute to the deceleration phase in the population curve of an organism. (3 marks)
- 26** State **one** survival value for each of the following in plants:
- (a) Thigmotropism in stems; (1 mark)
- (b) Geotropism in roots. (1 mark)
- 27** (a) What is meant by the term non-disjunction? (1 mark)
- (b) Give an example of a genetic disorder caused by:
- (i) non-disjunction; (1 mark)
- (ii) gene mutation. (1 mark)
- 28** State **three** structural differences between arteries and veins. (3 marks)
- 29** The diagram below represents a female cone.



- (a) Name the subdivision of the plant from which the cone was obtained. (1 mark)

(b) Other than the presence of cones, name **two** other external features that identify plants in the subdivision named in (a) above. (2 marks)

30 What is meant by the term apical dominance? (3 marks)