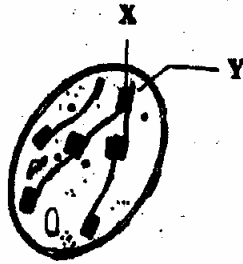


THE KENYA NATIONAL EXAMINATIONS COUNCIL
Kenya Certificate of Secondary Education
Biology Paper 1
2006

1 (a) State the function of cristae in mitochondria. (1 mark)

(b) The diagram below represents a cell organelle.



(i) Name the part labelled Y. (1 mark)

(ii) State the function of the part labelled X. (1 mark)

2 Name the part of a flower that develops into

(a) seed (1 mark)

(b) fruit. (1 mark)

3 (a) Name two tissues in plants which are thickened with lignin. (2 marks)

(b) How is support attained in herbaceous plants? (1 mark)

4 (a) Name the fluid that is produced by sebaceous glands. (1 mark)

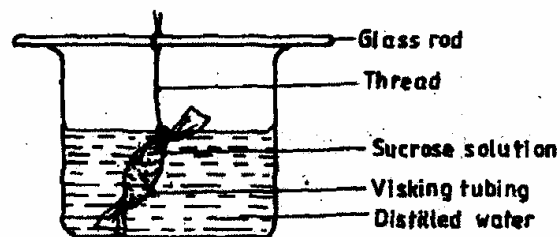
(b) What is the role of sweat on the human skin? (2 marks)

5 State two ways in which floating leaves of aquatic plants are adapted to gaseous exchange. (2 marks)

6 (a) State three characteristics of Monera that are not found in other kingdoms. (3 marks)

(b) Name the class to which a termite belongs. (1 mark)

- (a) Name one defect of the circulatory system in humans. (1 mark)
- (b) State three functions of blood other than transport. (3 marks)
- 8 State the role of vitamin C in humans. (2 marks)
- 9 (a) State two processes which occur during anaphase of mitosis. (2 marks)
- (b) What is the significance of meiosis? (2 marks)
- 10 State the importance of tactic response among some members of kingdom Protista. (1 mark)
- 11 State the role of insulin in the human body. (1 mark)
- 12 An experiment was set up as shown in the diagram below.

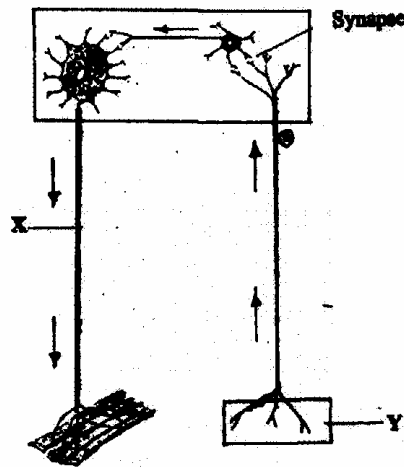


The set up was left for 30 minutes.

- (a) State the expected results. (1 mark)
- (b) Explain your answer in (a) above. (3 marks)
- 13 (a) In what form is energy stored in muscles? (1 mark)
- (b) State the economic importance of anaerobic respiration in plants. (2 marks)
- 14 (a) Distinguish between epigeal and hypogeal germination. (1 mark)

- (b) Why is oxygen necessary in the germination of seeds? (2 marks)
- 15 Explain continental drift as an evidence of evolution. (3 marks)
- 16 What is the importance of the following in an ecosystem? (2 marks)
- (a) Decomposers.
- (b) Predation.
- 17 (a) Distinguish between the terms homodont and heterodont. (1 mark)
- (b) What is the function of carnassial teeth? (1 mark)
- (c) A certain animal has no incisors, no canines, 6 premolars and 6 molars in its upper jaw. In the lower jaw there are 6 incisors, 2 canines, 6 premolars and 6 molars. Write its dental formula. (1 mark)
- 18 (a) State two functions of bile juice in the digestion of food. (2 marks)
- (b) How does substrate concentration affect the rate of enzyme action? (1 mark)
- 19 (a) Explain how the following prevent self-pollination:
- (i) protoandry (1 mark)
- (ii) self-sterility. (1 mark)
- (b) Give three advantages of cross-pollination. (3 marks)
- 20 (a) What name is given to response to contact with surface exhibited by tendrils and climbing stems in plants? (1 mark)
- (b) State three biological importance of tropisms to plants. (3 marks)

21 The diagram below represents a reflex arc in human.



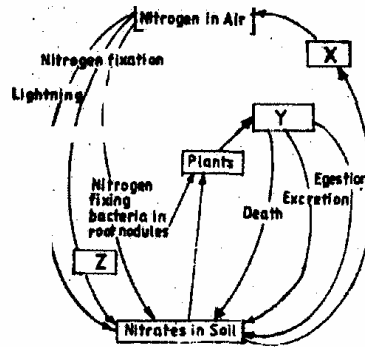
- (a) Name the parts labelled X and Y. (2 marks)
- (b) Name the substance that is responsible for the transmission of an impulse across the synapse. (1 mark)
- 22 (a) State the function of the ciliary muscles in the human eye. (1 mark)
- (b) State two functional differences between the rods and cones in the human eye. (2 marks)
- 23 State the function of each of the following parts of human ear. (4 marks)
- (a) Ear ossicles.
- (b) Cochlea.
- (c) Semi-circular canals.
- (d) Eustachian tube.

24 . State four ways in which respiratory surfaces are suited to their function. (4 marks)

25 (a) A dog weighing 15.2 kg requires 216 kJ while a mouse weighing 50 g requires 2736 kJ per day. Explain. (2 marks)

(b) What is the end-product of respiration in animals when there is insufficient oxygen supply? (1 mark)

26 The chart below represents a simplified nitrogen cycle.



What is represented by X, Y and Z? (3 marks)

27 Name the end-products of the light stage in photosynthesis. (2 marks)

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