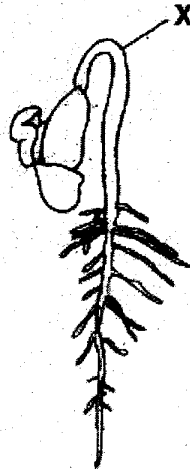


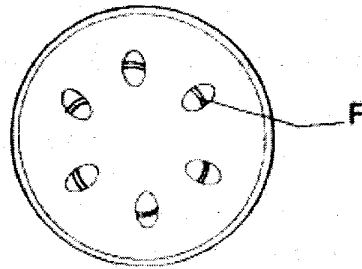
29.4 BIOLOGY (231)
29.3.1 Biology Paper 1 (231/1)

- 1 (a) Name the external feature which is common in birds, fish and reptiles. (1 mark)
- (b) State two characteristics of fungi. (2 marks)
- 2 Name two benefits that a parasite derives from the host. (2 marks)
- 3 State the functions of the following parts of a light microscope: (2 marks)
- (a) Objective lens
- (b) Diaphragm.
- 4 (a) The state during which a seed cannot germinate even when conditions for germination are suitable is called (1 mark)
- (b) The diagram below represents a stage during germination of a seed.



- (i) Name the type of germination illustrated in the diagram. (1 mark)
- (ii) State the role of the part labelled X during germination of the seed. (2 marks)
- 5 (a) What is meant by the following terms:
- (i) hybrid vigour; (1 mark)
- (ii) polyploidy? (1 mark)
- (b) - State two causes of chromosomal mutations. (2 marks)

6 The diagram below shows a section through a plant organ.



- (a) (i) Name the class of the plant from which the section was obtained. (1 mark)
(ii) Give a reason for your answer in (a)(i) above. (1 mark)
- (b) State the function of the part labelled F. (1 mark)

7 State the function of the following cell organelles:

- (a) Ribosomes (1 mark)
- (b) Lysosomes. (1 mark)

8 (a) Pregnancy continues if the ovary of an expectant mother is removed after 4 months. Explain. (2 marks)

(b) What is the role of the testes in the mammalian reproductive system? (2 marks)

9 (a) Name the causative agents of the following diseases in humans: (2 marks)

- (i) typhoid;
(ii) amoebic dysentery.

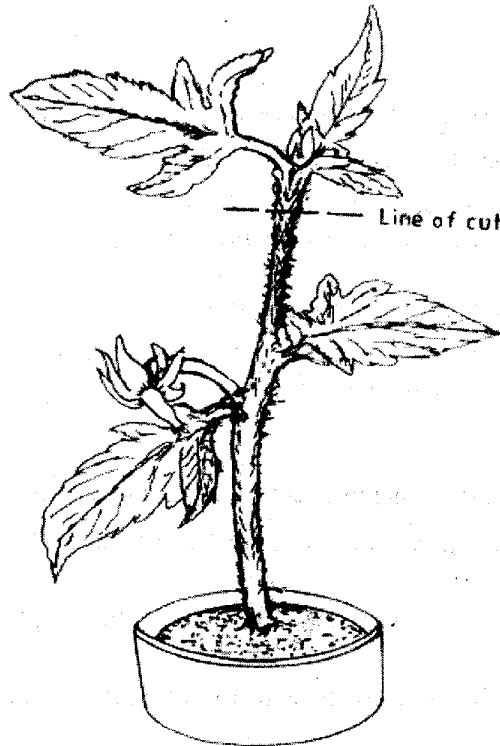
(b) Name the disease in humans caused by *Plasmodium falciparum*. (1 mark)

10 (a) (i) What is meant by vestigial structures? (1 mark)

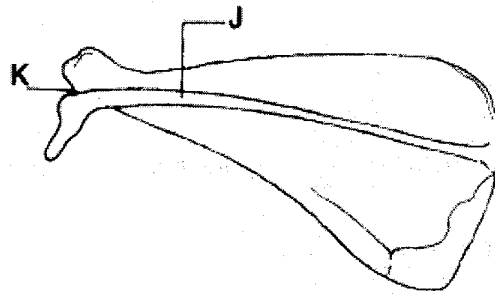
(ii) Give an example of a vestigial structure in human. (1 mark)

(b) Explain why certain drugs become ineffective in curing a disease after many years of use. (2 marks)

- 11 In an experiment the shoot tip of a young tomato plant was decapitated as shown in the diagram below.



- (a) State the expected results after 2 weeks. (1 mark)
 (b) Give a reason for your answer in (a) above. (2 marks)
- 12 The diagram below represents a bone obtained from a mammal.



- (a) Name the bone. (1 mark)
 (b) Name the:
 (i) bone which articulates with the bone named in (a) above at the cavity labelled K; (1 mark)
 (ii) joint formed by the two bones. (1 mark)
 (c) State the function of the part labelled J. (1 mark)
- 13 (a) Distinguish between diffusion and active transport. (2 marks)

- (b) State one role that is played by osmosis in:
- (i) plants; (1 mark)
- (ii) animals. (1 mark)
- 14 Name a support tissue in plants that is not thickened with lignin. (1 mark)
- 15 Name the type of movement that occurs within a plant cell. (1 mark)
- 16 (a) Name the gaseous exchange surface in insects. (1 mark)
- (b) How is the surface named in (a) above suited to its function? (2 marks)
- 17 Explain why plants do not require specialised excretory organs. (4 marks)
- 18 Explain how the following factors affect the rate of photosynthesis:
- (a) Concentration of carbon (iv) oxide (1 mark)
- (b) Light intensity. (1 mark)
- 19 (a) State three effects of dumping untreated sewage into a river. (3 marks)
- (b) Name one process that is responsible for loss of energy from one trophic level to the next. (1 mark)
- 20 Other than using the quadrat, give two methods of estimating population of grass. (2 marks)
- 21 Explain what happens in humans when the concentration of glucose in the blood decreases below the normal level. (4 marks)
- 22 Explain how the carnassial teeth of a dog are adapted to their function. (2 marks)
- 23 State the function of iron in the human body. (1 mark)
- 24 Explain how the following factors determine the daily energy requirement in humans:
- (a) Age (1 mark)
- (b) Occupation (1 mark)
- (c) Sex. (1 mark)
- 25 State two ways in which aerenchyma tissues in aquatic plants are adapted to their function. (2 marks)
- 26 How are the mitochondria adapted to their function? (2 marks)
- 27 State two ways in which anaerobic respiration is applied in industries. (2 marks)
- 28 (a) State three structural differences between arteries and veins in mammals. (3 marks)
- (b) Name a disease that causes thickening and hardening of arteries. (1 mark)
- 29 Explain why the rate of transpiration is reduced when humidity is high. (1 mark)