KENYA NATIONAL EXAMINATION COUNCIL

KCSE 2009

BIOLOGY

PAPER 1

1. (a) Name the external feature which is common in birds, fish and reptiles (1 mk)

(b) State two characteristics of fungi (2 mks)

2. Name two befits that a parasite derives from the host (2 mks)

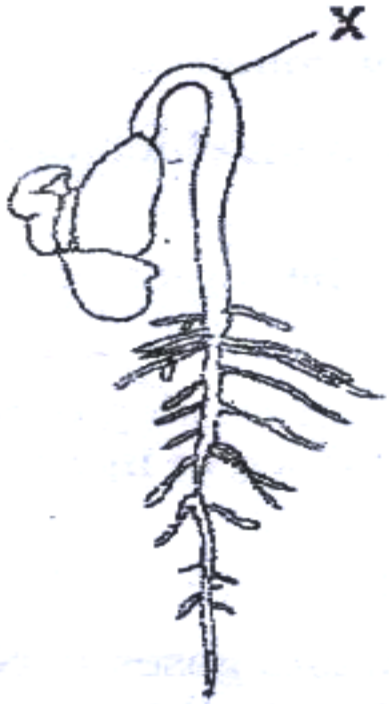
3. State the functions of the following parts of a light microscope (2 mks)

(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 mk)

(b) The diagram below represents a stage during germination of a seed



(i) Name the type of germination illustrated in the diagram (1mk)

(ii) State the role of the part labeled x during germination of the seed (2 mks)

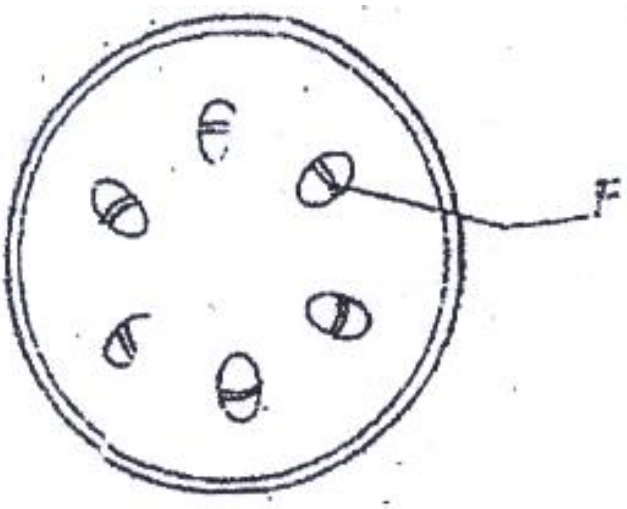
5. (a) What is meant by the following terms

(i) Hybrid vigour (1 mk)

(ii) Polyploidy? (1 mk)

(b) State two causes of chromosomal mutations (2 mks)

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



(a) (i) Name the class of the plant which the section was obtained (1 mk)

(ii) Give a reason for your answer in (a) (i) above

(b) State the functions of the part labeled F (1 mk)

7. State the function of the following cell organelles

(a) Ribosome (1 mk)

(b) Lysosomes (1 mk)

8. (a) Pregnancies continues if the ovary of an expectant mother is removed after 4 months explain (2 mks)

(b) What is the role of the testes in the mammalian reproductive systems? (2 mks)

9. (a) Name the causative agents of the following diseases in humans (2 mks)

(i) Typhoid

(ii) Amoebic dysentery

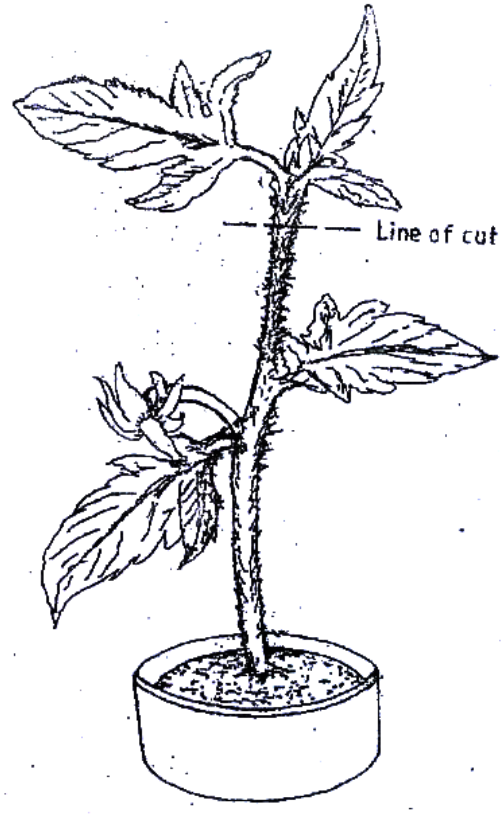
(b) Name the disease in humans caused by plasmodium falciparum (1 mk)

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

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

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

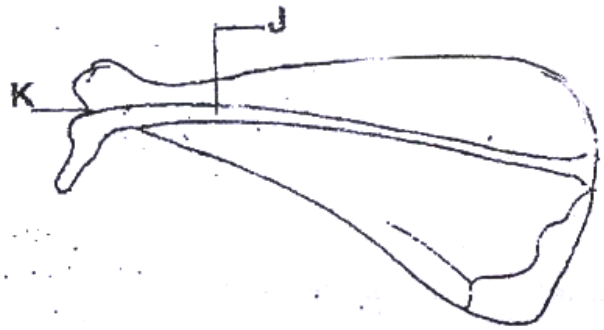
11. In an experiment the shoot tip of a young tomato plant was decapitated as shown in the diagram below



(a) State the expected results after 2 weeks (1 mk)

(b) Give a reason for your answer in (a) above (2 mks)

12. The diagram below represents a bone obtained from a mammal



(a) Name the bone (1 mk)

(b) Name the:

(i) Bone which articulate with the bone named in (a) above at the cavity labeled K; (1 mk)

(ii) Joint formed by the two bones (1 mk)

(c) State the function of the part labeled J (1 mk)

13. (a) Distinguish between diffusion and active transport (2 mks)

(b) State one role that is played by osmosis in (1 mk)

(i) Plants

(ii) Animals

14. Name a support tissue in plants that is not thickened with lignin (1 mk)

15. Name the type of movement that occurs within a plant cell (1 mk)

16. (a) Name the gaseous exchange surface in insects (1 mk)

(b) How is the surface named in (a) above suited to its function (2 mks)

17. Explain why plants do not require specialized excretory organs (4 mks)

18. Explain how the following factors affect the rate of photosynthesis:

(a) Concentration of carbon (iv) oxide (1 mk)

(b) Light intensity (1mk)

19. (a) State three effects of dumping untreated sewage into a river (3 mks)

(b) Name one process that is responsible for loss of energy from one trophic level to the next (1mk)

20. Other than using the quadratic, give two methods of estimating population of grass (2 mks)

21. Explain what happens in humans when concentration of glucose in the blood decreases below the normal level (4 mks)

22. Explain how the carnassials teeth of a dog are adapted to their function (2 mks)

23. state the function of iron in the human body (1 mk)

24. Explain how the following factors determine the daily energy requirement in human:

(a) Age (1 mk)

(b) Occupation (1 mk)

(c) Sex (1 mk)

25. State two ways in which aerenchyma tissues in aquatic plants are adapted to their function (2 mks)

26. How are the mitochondria adapted to their functions? (2 mks)

27. State two ways in which anaerobic respiration is applied in industries (2 mks)

28. (a) State three structural differences between arteries and veins in mammals (3 mks)

(b) Name a disease that causes thickening and hardening of arteries (1 mk)

29. Explain why the rate of transpiration is reduced when humidity is high

ANSWERS:

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