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231/1
BIOLOGY
THEORY
JUNE/AUGUST 2010
PAPER 1
2 HOURS

FORM FOUR MID-YEAR CONTINUOUS ASSESSMENT TEST
Kenya Certificate of Secondary Education
BIOLOGY
PAPER 1
THEORY
2 HOURS

INSTRUCTION TO CANDIDATES

Answer all the questions in the spaces provided

1-32	80
CANDIDATE SCORE	

This paper consist of 9 printed pages

Please Turn Over

1. State two properties of the cell membrane. (2mks)

2. Outline two precautions taken during collection and observation of live specimens. (2mks)

3. (a) What is the formula for calculating linear magnification using a light microscope. (1mk)

(b) State two functions of centrioles. (2mks)

4. Describe how diffusion gradient affects the rate of diffusion. (3mks)

5. What is a guard cell? (2mks)

6. State the specific sites in which the following reactions occur: (2mks)

(i) Light stage.

(ii) Dark stage.

7. Plants relatively have less waste to excrete than animals. Giving two reasons to explain this Observation. (2mks)

8. (a) Name the gap in the lower jaw of a herbivore that facilitate movement of the tongue during chewing. (1mk)

(b) Name two substances absorbed into the blood from the stomach in man. (2mks)

9. (a) Give two reasons why lower organisms such as bacteria and simple multicellular Organisms do not have an elaborate transport system. (2mks)

(b) Explain how the shape of erythrocytes helps it to function efficiently. (1mk)

10. Explain leaf fall as a factor affecting transpiration rate. (3mks)

11. List three structures where gaseous exchange occurs in amphibians. (3mks)

12. State two causes of Asthma. (2mks)

13. Give two factors affecting the rate of respiration. (2mks)

14. (a) Aerenchyma tissues and pneumatophores are found in plants occupying different Habitats, Identify these habitats. (2mks)

(b) What is the function of pneumatophores? (1mk)

15. Name two excretory products produced by both plants and animals. (2mks)

16. What is the meaning of the following terms as they apply to cells (i) Eukaryotes. (1mk)

(ii) Prokaryotes.

(1mk)

17. What is the effect of anti-diuretic hormone (ADH) in the human body.

(2mks)

18. State two classes of the phylum chordata where all members are endothermic.

(2mks)

19. State two ways in which parasitic worm of the genus schistosoma gains entry into the body of human beings.

(2mks)

20. (a) Name the stage in mitosis where chromatids collect together at the two opposite ends of the spindle fibres.

(1mk)

(b) State two roles of the placenta in humans.

(2mks)

21. Describe the sensor mechanism of seed dispersal.

(2mks)

22. The diagram below shows the internal structure of a bean seed
A B C

(a) Name the parts labeled A and B.

(2mks)

(b) What is the role of the structure labeled C?

(1mk)

23. (a) Define the following term
Incomplete metamorphosis.

(1mk)

(b) State one function of each of the following hormones

(2mks)

(i) Juvenile hormone.

(ii) Ecdysone.

24. State the category of variation into which the following traits fall (2mks)
(i) Blood group.

(ii) Skin pigmentation.

25. Differentiate between heterozygosity and homozygosity. (2mks)

26. Explain “struggle for existence” and “survival of the fittest” as they apply to natural Selection. (4mks)

27. State three differences between transmission through the endocrine system and nervous System. (3mks)

28. (a) (i) Which eye defect is corrected by bifocal lens. (1mk)

(ii) Name one cause of the eye defect.

(1mk)

29. State three reasons why plants need support.

(3mks)

30.

(a) Identify the type of muscle shown above

(1mk)

(b) Name two parts in the human body where the type of muscle named in (a) above is found

(2mks)

31. (a) Name two components of the endoskeleton

(2mks)

(b) The exoskeleton limits continuous growth. Explain

(1mk)

32. What is the function of a swim bladder in fish?

(2mks)
