NYAMIRA DISTRICT MOCK EXAMINATION-2007

Kenya Certificate of Secondary Education (K.C.S.E)
231/1
BIOLOGY
PAPER 1

1. The diagram shown below is of a specialized cell.

a) Identify the cell. (1mk) *Nym*
b) State its function in the mammalian body. (1mk) *Nym*

2. a) Name two meristematic regions in a flowering plant. (2mks) *Nym*
b) State one characteristic of meristematic region. (1mk) *Nym*

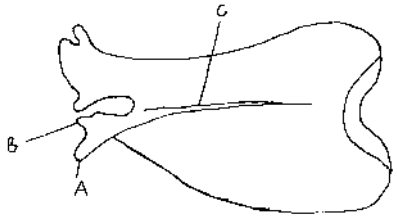
3. Name the organs of the mammalian body that are responsible for the production of gametes (2mks) *Nym*

4. The equation below shows what happens in cellular respiration.

$$C_{18}H_{36}O_2 + 26O_2 \longrightarrow 18CO_2 + 18H_2O + \text{energy}$$

a) In which organelle does such a reaction occur? (1mk) *Nym*
b) Calculate the respiratory quotient of the substrate. (1mk) *Nym*
c) Name the substrate being respired. (1mk) *Nym*

5. The diagram below shows a type of a bone from a mammalian skeleton.



a) Name the parts labelled A and C. (2mks) *Nym*
b) Give the function of the part labelled B. (1mk) *Nym*
c) Name the joint formed between the bone above and the next bone at its anterior region. (1mk) *Nym*

6. a) State the effect of pouring oil into a fish pond. (2mks) *Nym*
b) state one effect of draining raw sewage into a fish pond. (1mk) *Nym*

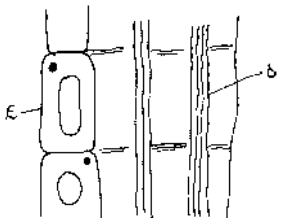
7. State the functions of each of the following parts of the eye. (3mks) *Nym*

Retina

Sclera

Choroid layer

8. The diagram below represents a transport tissue in plants.



a) Identify the parts labelled D and E. (2mks) *Nym*

b) State how the tissue is adapted to its function. (1mk) *Nym*

9. Study the table below and answer the questions that follow

Ion	Concentration in lake water	Concentration in cell sap of aquatic plant
Sodium	120	70
Iodine	0.2	400

a) State the process used to absorb

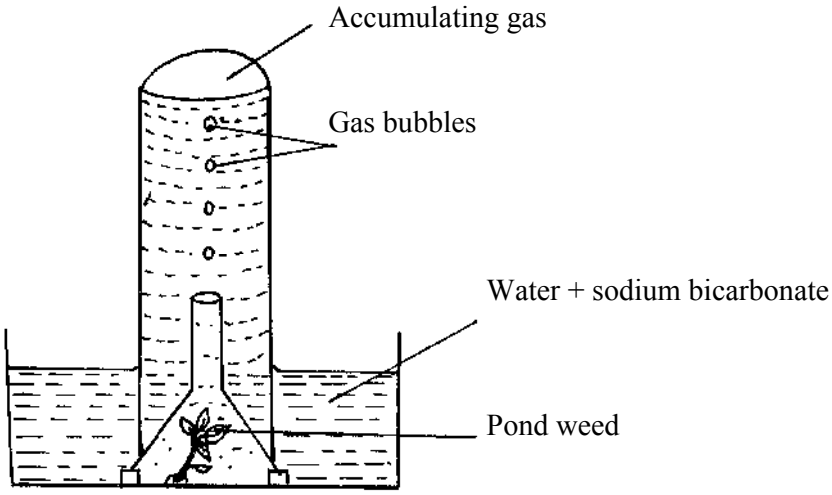
(i) Sodium ions (1mk) *Nym*

(ii) Iodine ions (1mk) *Nym*

b) (i) Name the ion that would fail to be absorbed if the plant is treated with a respiratory inhibitor. (1mk) *Nym*

(ii) State the reason for your answer above. (1mk) *Nym*

10. Study the experimental set up below and answer the questions that follow.



a) Why was sodium hydrogen carbonate added to the water? (1mk) *Nym*

b) Name the environmental factors required in order to obtain positive results.(2mks) *Nym*

11. How are the stems of flowering plants adapted for gaseous exchange? (2mks) *Nym*

12. Identify the type of responses exhibited by the following:

(i) Pollen tube grows towards the ovules. (1mk) *Nym*

(ii) A seedling growing in a darkroom towards an open window. (1mk) *Nym*

(iii)The shoot of a bean seedling pinned on a cork sheet and put horizontally on a wet blotting paper bends upwards while the root bends downwards. (1mk) *Nym*

13. State three reasons why plants do not have an elaborate excretory system. (3mks) *Nym*

14. State why the alveoli in a mammalian lung have the following characteristics.(4mks) *Nym*

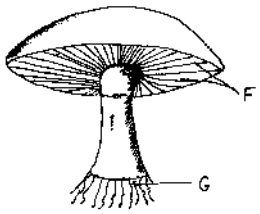
a) Thin walls

b) Moist surfaces

c) Large surface area

d) Highly vascularised

15. Below is a diagram of an organism



(a) Identify the kingdom to which the organism belongs. (1mk) *Nym*

(b) State the functions of the structures labelled F and G. (2mks) *Nym*

(c) Name the maternal that makes the cell wall of the organism. (1mk) *Nym*

16. State the role of the following hormones in the menstrual cycle in humans

a) Luteinizing hormone. (2mks) *Nym*

b) Follicle stimulating hormone. (2mks) *Nym*

17. State two compounds formed when carbon IV oxide is carried in a red blood cell. (2mks) *Nym*

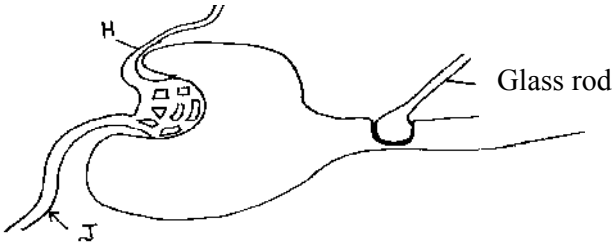
b) Name the compound formed in blood when excess hydrogen ions combine with it to form a buffer in blood. (1mk) *Nym*

18. The following diagrams represents embryonic stages of development for various organisms.

a) Name the type of evidence for organic evolution depicted in the diagram.(1mk) *Nym*

b) Explain the evidence in (a) above. (2mks) *Nym*

19. Study the diagram below which shows part of a kidney nephron and answer the questions that follow.



a) Name the blood vessels labelled H and J. (2mks) *Nym*

b) What is the effect of the glass rod on ultra filtration? (1mk) *Nym*

20. a) Identify the following mammalian tooth. (1mk) *Nym*

b) What is the function of the following during digestion in human beings.(2mks) *Nym*

(i) Teeth……

(ii) Salira ……

21. a) State one advantage of internal fertilization in animals. (1mk) *Nym*

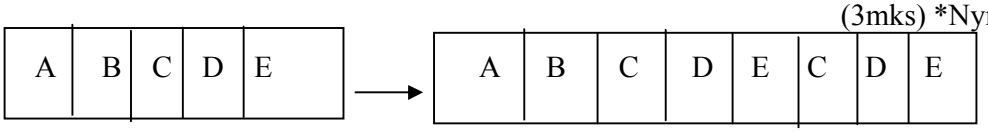
b) What are the advantages of an embryo developing inside a mammalian body?

(2mks) *Nym*

22. Below are some representations of chromosomal mutations. Identify each one of them.

(3mks) *Nym*

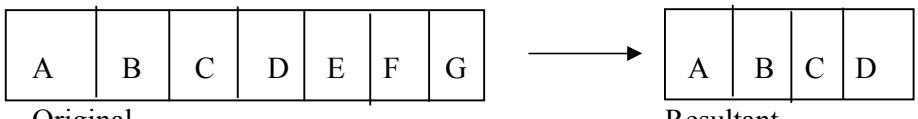
a)



Original Resultant

Identify the mutation ……..

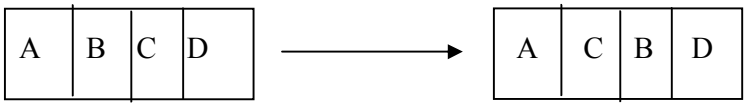
b)



Original Resultant

Identify the mutation ……..

c)



Original Resultant

Identify the mutation ……..

23. a) If the pancreas of a person is not functional;

(i) What hormones are likely to be deficient. (2mks) *Nym*

(ii) Name the disease likely to be suffered by the person. (1mk) *Nym*

24. State two ways by which herbaceous plants attain support. (2mks) *Nym*

25. Differentiate between aerobic and anaerobic respiration. (3mks) *Nym*

26. Name the carbohydrate stored in the:

a) Mammalian liver. …… (1mk) *Nym*

b) Potato tuber …… (1mk) *Nym*

27. A man who had been involved in a road accident had his brain damage. His breathing rate was abnormal and he lost body balance. Which parts of the brain were likely to have been damaged so as to:

a) Have low rate of breathing? (1mk) *Nym*

b) Loss of body balance? (1mk) *Nym*