

Name Index No
School Candidates Sign
Date

231/1
Biology Paper 1 (Theory)
July/AUGUST 2014
TIME: 2 Hours

KAMUKUNJI DISTRICT KCSE EVALUATION TEST

Instructions to candidates

1. Write your name and index number in the spaces provided above.
2. Sign and write the date of examination in the space provided above.
3. Answer all questions in the space provided.
4. Candidates should check the question paper to ascertain that all the pages are printed.

For Examiner's Use Only

Question	Maximum Score	Candidates Score
1-27	80	

1. Name two structure that link the foetus to its mother. (2 mks)

2. (a) Name one class in phylum chordata where organisms undergo metamorphosis. (1 mks)

(b) State two main distinguishing features found in class mammalia only. (2 mks)

3. (a) What is carapace? (1 mks)

(b) State two ways in which the exoskeleton has helped in the success of arthropods life in terrestrial habitats. (2 mks)

4. (a) What is meant by the term “allele”. (1 mks)

(b) Distinguish between dominant and recessive alleles. (2 mks)

5. (a) State two organic pollutants of the rivers flowing through urban centres in Kenya. (2 mks)

(b) Apart from solid wastes, state two major pollutants on land. (2 mks)

6. (a) What is organic evolution? (2 mks)

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

7. (a) What is the meaning of the term “vector” from
(i) Ecological perspective? (1 mk)

(ii) Genetic engineering perspective. (1 mk)

(b) State two advantages of cloning organisms. (2 mks)

8. Bivalent, synapsis and crossing over are terminologies used
(a) In reference to which stage, of which type of cell division? (2 mks)

(b) Differentiate between synapsis and synapse. (2 mks)

9. How is the mammalian trachea adapted to its function? (2 mks)

10.(a) Name the four portions of the human nephron that are only found in the cortex. (2 mks)

(b) State two processes that are involved in urine formation. (2 mks)

11. (a) What is meant by the term 'ecosystem'? (2 mks)

(b) State four abiotic factors that affect organisms in almost all ecosystems. (2 mks)

12. A certain plant was found to have 22 chromosomes in its calyx cells. State the number of chromosomes present in: (2 mks)

(a) Embryo sac cells

(b) Seed endosperm

13. (a) Why is glycolysis an anaerobic process? (1 mk)

(b) State three products of glycolysis. (3 mks)

14. Name the specific part of brain that triggers sweating. (1 mk)

15. The following table shows information on concentration of salts in the cell sap of two mature water plants A and B and the concentration of the salt in the marine water.

Plant	Conc. Of salt in PPM	
	Cell sap	Marine water
A	0.025	0.011
B	0.031	0.066

Name the process by which cells of plants A and B absorb mineral ions from the water. (2 mks)

A.....

B.....

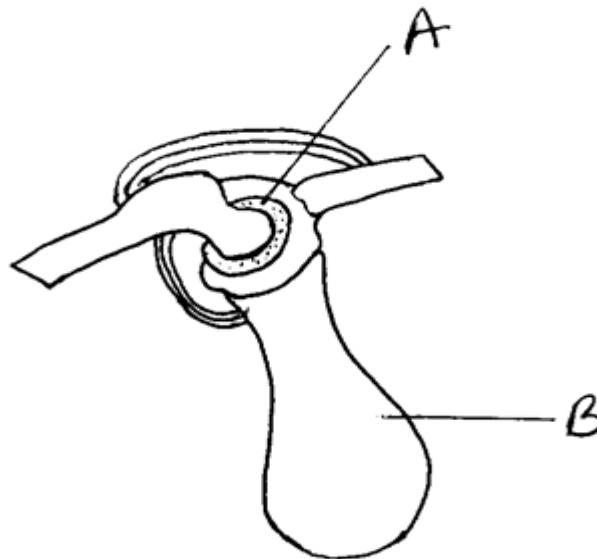
16. Name the part of the ear that carries out the following functions:

(a) Converts sound vibrations into nerve impulses. (1 mk)

(b) Converts sound waves to sound vibrations. (1 mk)

(c) Transports and amplify sound vibrations. (1 mk)

17. The diagram below represents the structure of the human shoulder joint.



(a) Name the part labeled B (1 mk)

(b) State the roles played by part A. (2 mks)

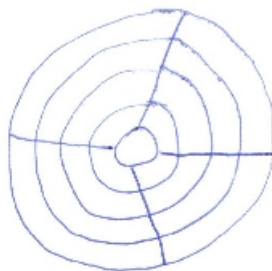
(c) State on functional differences between the above joint and the knee joint. (2 mks)

18. State one structural and one functional difference between rough endoplasmic reticulum and smooth endoplasmic reticulum. (1 mk)

Structural difference

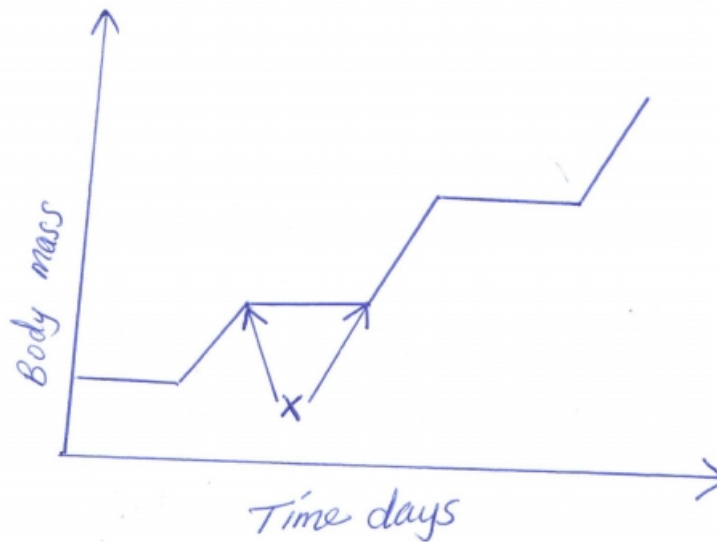
Functional difference (1 mk)

19. The diagram below shows the front view of mammalian eye.



- (i) Draw the change that would appear when a person moves from a brightly lit area to a dimly lit area. (1 mk)
- (ii) Explain what causes this change. (2 mks)

20. The graph below shows growth pattern of an insect.



- (a) Name the pattern growth shown. (1 mk)
- (b) Suggest what is happening to the insect at point X. Explain your answer. (2 mks)
- (c) State one advantage of metamorphosis to the life cycle of insects. (1 mk)

21. State three adaptations of the malphigian layer to its functions. (2 mks)

22. Name the parts of a seed that are formed by the following flower parts. (2 mks)

(i) Inner integuments -

(ii) Outer integuments -

23. Name the hormones produced from the following glands. (2 mks)

(a) Corpora allata

(b)

(c) Prothoracic glands

24. (a) Name one plant division that shows alternation of generations. (1 mk)

(c) State two reasons why moss species are poorly adapted to live in terrestrial habitats. (2 mks)

25. Name the causative agents of the following diseases:

(i) Pneumonia -

(ii) Herpes simplex - (2 mks)

26. Mention two factors that hinder self-pollination in the flowers of monoecious plants. (2 mks)

27.(a) What is deamination? (1 mk)

(b) Explain the importance of deamination in the body

(1 mk)

(c) Where is urea formed in the body?

(1 mk)

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