

Name..... Index No.....
School..... Candidate's sign.....
Date.....

231/1
BIOLOGY
Paper 1
July/August 2012
2 Hours

MBITA-SUBA DISTRICTS JOINT EVALUATION TEST– 2012
Kenya Certificate of Secondary Education (K.C.S.E)

231/1
BIOLOGY
Paper 1
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INSTRUCTIONS TO CANDIDATES.

1. Answer all the questions in the space provided

For examiners use only:

Questions	Max score	Candidates
1-27	80	

This paper consists of 2 printed pages. Candidates should check the question paper to ensure that all the pages are printed as indicated and no questions are missing.

1. State the function of the following cell organelle (3mks)
- (a) Ribosome
-
-
- (b) Smooth endoplasmic reticulum
-
-
- (c) Golgi apparatus
-
-

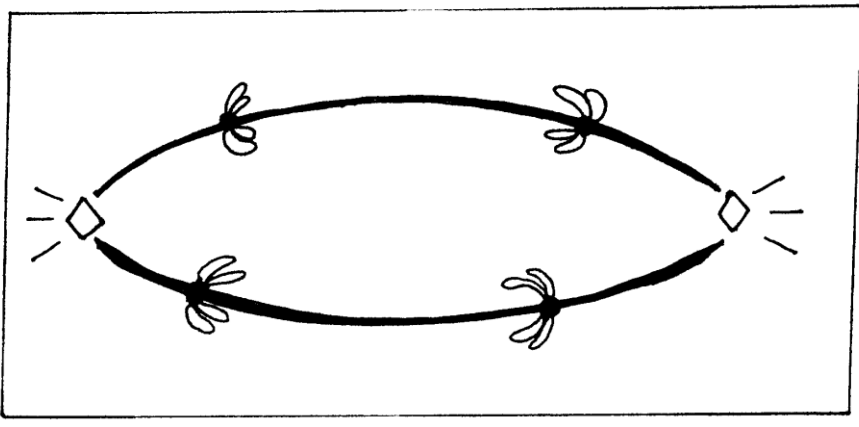
2. List any distinguishing features of the class arachnida (2mks)
-
-

3. (a) (i) Name the hormone responsible for moulting in insects (1mk)
-
- (ii) Where is the hormone in a(i) above secreted
-
-

- (b) State the role of juvenile hormone in the development of insect (1mk)
-

4. State three functions of the mammalian blood other than transport (3mks)
-
-
-

5. Below is a stage in cell division



- (a) Identify the stage (1mk)
-

(b) Give reasons for your answer (2mks)

.....
.....

6. Industrial wastes may contain metallic pollutants. State how such pollutants may indirectly reach and accumulate in the human body if the wastes were dumped into rivers. (3mks)

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.....
.....

7. Name parts of the brain which control

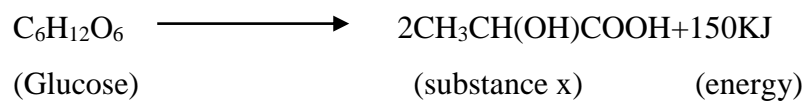
(a) Involuntary activities e.g breathing (1mk)

.....

(b) Control voluntary body movement (1mk)

.....

8. During a strenuous exercise, the chemical process represented by the equation below takes place in human muscles



(a) What is the name of this process (1mk)

.....

(b) Name the substance X (1mk)

.....

(c) What happens to the muscle if x accumulates to critical level (1mks)

.....

9. (a) What is meant by (a) organic evolution (1mk)

.....

(b) Adaptive radiation (1mk)

.....

10. Identify the type of mutation represented by the following pairs of words

(i) Shirt instead of skirt (1mk)

.....

(ii) Hopping instead of shopping (1mk)

.....

(iii) Eat instead of tea (1mk)

.....

11. State the function of the following in reproduction

(a) Umbilical cord (3mks)

.....

.....

(b) Aerosome

.....

.....

(c) Follicular stimulating hormone

.....

.....

12. (a) Explain why a person discharges urine more frequently when environment temperatures are low than when they are high. (2mks)

.....

.....

.....

(b) Name the nitrogenous wastes excreted by a fresh water fish (1mks)

.....

13. Explain why individuals with smaller sizes requires more energy per kg of body weight than those with large sizes (3mks)

.....

.....

.....

.....

14. List three types of muscles (3mks)

.....

.....

.....

15. Describe the path taken by carbon (iv) oxide released from the tissues of a cockroach into the atmosphere (3mks)

.....

.....

.....

.....

16. Name the blood vessels that transport blood from (3mks)
- (a) Small intestines to the liver.....
- (b) Heart to the kidney.....
- (c) Heart to the lungs.....

17. The number and distribution of stomata on three different leaves are shown in the table below

Leaf	Number of stomata	
	Upper epidermis	Lower epidermis
A	300	0
B	150	200
C	02	13

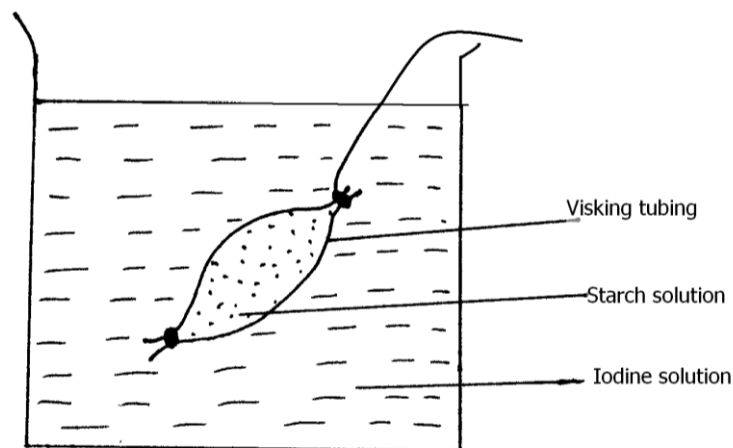
- (a) Suggest the possible habitat of the plant from which the leaves were obtained

Leaves	Habitat
A
B

- (b) State one modification found in the stomata of leaf C (1mk)

.....

18.



The set-up above was prepared by form one students and left for 1 hour

They made the following observations

	At the start	After one hour
In visking tubing	White solution	Blue-black
In beaker	brown	brown

(a) Identify the physiological process being investigated (1mk)

.....

(b) Explain the observation made (3mks)

.....

.....

19. In a field study a student came across a plant whose leaves quickly folded when touched, he gave the name as Mimosa Pudica

(a) Identify the mistake he made when writing the scientific name (2mks)

.....

(b) Name the type of response (1mk)

.....

(c) State the possible advantage of this response to the plant. (1mk)

.....

20. State three characteristics features of an efficient respiratory surface (3mks)

.....

.....

21. State three environmental factors that affect the rate of stomatal transpiration (3mks)

.....

.....

22. (a) What is the importance of Adenosine triphosphate (ATP) in mammals (1mk)

.....

(b) State two functions of respiratory Quotient (RQ) (2mks)

.....

.....

23. Give two functions of the exoskeleton in insects (2mks)

.....

.....

24. State four ways of breaking seed dormancy (4mks)

.....

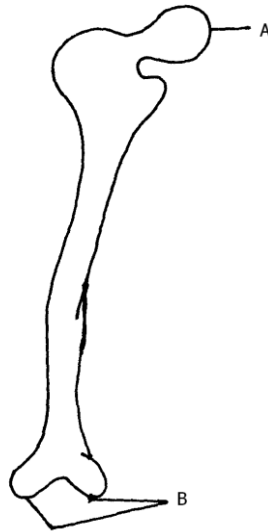
.....

.....

25. Other than sexual intercourse name the other ways by which HIV/AIDS is spread (3mks)

.....
.....
.....

26. The diagram below represents a bone in a mammal



(a) Identify the bone (1mk)

.....

(b) Name the bone that articulate with the above bone at part A (1mk)

.....

(c) Name the joint formed at the part labeled B (3mks)

.....

.....

27. An animal has the following dental formula,

$$I=0/2 \quad C=0/2 \quad pm \ 3/3 \quad m=2/3$$

(a) Suggest the type of diet for this animal (1mk)

.....

(b) Give a reason for your answer in (a) above (1mk)

.....

(c) How many teeth does the animal have in total (1mk)

.....

