

Name:

Index No:

Candidate's Signature:.....

Date:

231/1

BIOLOGY

Paper 1

Time: 2 Hours

CROSS COUNTRY EXAMS 2015

Kenya Certificate of Secondary Education (K.C.S.E)

BIOLOGY

Paper 1

Time: 2 Hours

INSTRUCTIONS TO CANDIDATES:

- Write **your name** and **Index Number** and **School** in the spaces provided above.
- Answer **all** the questions
- All answers **must** be written in the spaces provided in this booklet.
- **Sign** and **write** the **date** of examination in the spaces provided above.
- Additional pages **must not** be inserted

EXAMINER'S USE ONLY

Question	Maximum score	Candidates Score
1 - 29	80	

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1. State the branch of Biology that would be used in solving the problem of disputed parentage. (1mk)

.....
.....

2. (a) What is the formula of calculating linear magnification of a specimen when using a hand lens? (1mk)

.....
.....

(b) Give a reason why staining is necessary when preparing specimens for observation under the microscope (1mk)

.....
.....

3. State **two** functions of Golgi apparatus. (2mks)

.....
.....

4. State the importance of the following processes that take place in the nephrons of a human kidney
Ultra filtration (1mk)

.....

Selective reabsorption (1mk)

.....

5. (a) Name a disease of the liver whose symptom is jaundice (1mk)

.....

(b) State the causative agent of: (1mk)

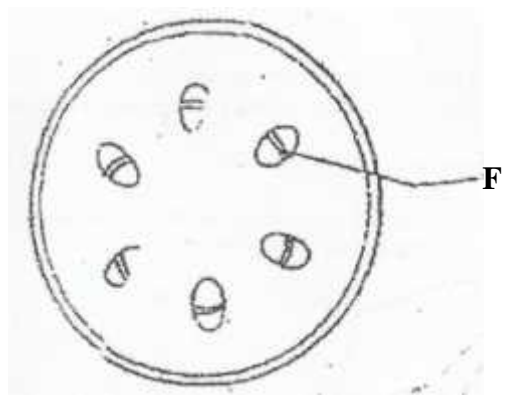
(i) Cholera (1mk)

.....

(ii) Candidiasis (1mk)

.....

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



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

.....

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

.....

(b) State the functions of the part labelled **F** (1mk)

.....

7. Describe what happens during the light stage of photosynthesis (2mks)

.....

.....

8. (a) State **two** environmental conditions that can cause seed dormancy (2mks)

.....

.....

(b) Name the part of a bean that elongates to bring about epigeal germination (1mk)

.....

9. (a) Name a fat soluble vitamin manufactured by the human body (1mk)

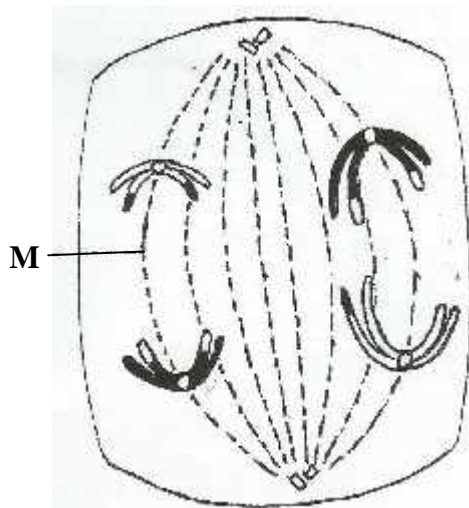
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(b) State **two** functions of potassium in the human body (1mk)

.....

.....

10. The diagram below represents a stage during cell division



(a) (i) Identify the stage of cell division (1mk)

.....

(ii) Give **two** reasons for your answer in (a) (i) above (2mks)

.....

.....

(b) Name the structures labeled **M** (1mk)

.....

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

.....

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

.....

.....

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

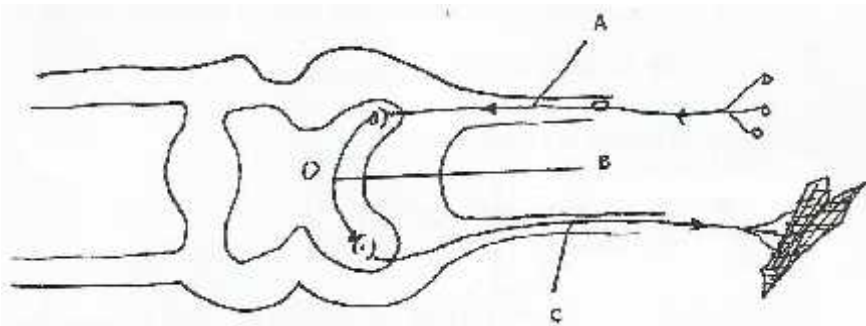
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(b) Explain why certain drugs become ineffective in curing a disease after many years of use.

..... (2mks)

.....

13. The diagram below represents a simple reflex arc.



(a) Name the parts labeled A, B, C. (3mks)

A

B

C

(b) What is the role of part A (1mk)

.....

14. (a) In which part of the cell do the following stages of respiration take place. (2mks)

(i) Glycolysis

.....

.....

(ii) Kleb's Cycle

.....

.....

(b) In which of the **two** stages above is most energy produced? (1mk)

.....

15. Explain why drug addicts are prone to HIV infection. (2mks)

.....

.....

16. Name a sex-linked trait associated with:

(i) Y – Chromosome

(1mk)

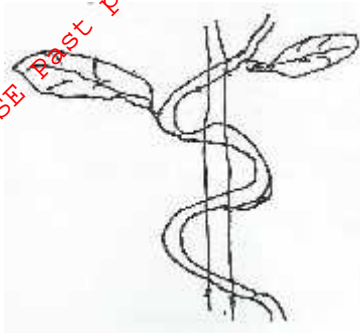
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(ii) X – Chromosome

(1mk)

.....
.....

17. Below is a diagram of a plant response.



(i) Name the plant response illustrated above.

(1mk)

.....

(ii) State the importance of the named response above to the plant.

(1mk)

.....

18. (a) (i) A man's urine gave positive reaction with Benedict's solution. Name the disease he was suffering from.

(1mk)

.....

(ii) State **two** ways in which the symptoms of the condition in (a) above can be controlled.

(2mks)

.....

.....

(b) Name the hormones involved in regulating glucose level in blood.

(2mks)

.....

.....

19. (a) Name **two** structures for gaseous exchange in aquatic plants.

(2mks)

.....

.....

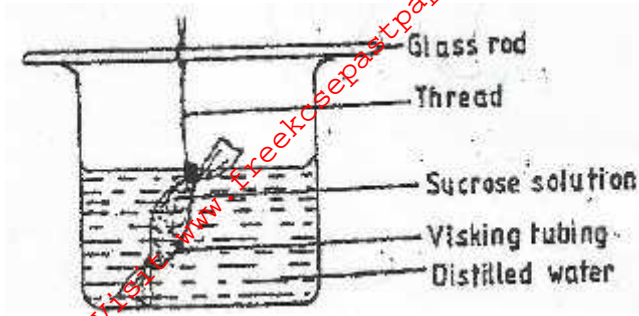
(b) What is the effect of contraction of the diaphragm muscles during breathing in mammals?

(3mks)

.....

.....

20. An experiment was set up in the experiment as shown below.



The set up was left for 30 minutes.

(a) State the expected results. (1mk)

.....

(b) Account for your answer in (a) above (2mks)

.....

.....

21. State **two** structural modifications of nephrons found in desert mammals (2mks)

.....

.....

22. (a) State **two** characteristics of Monera that are not found in other kingdoms (2mks)

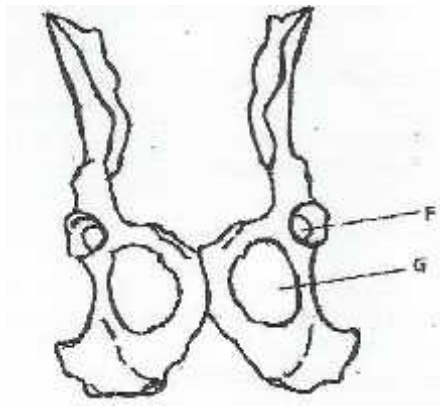
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(b) Name the class to which a termite belongs (1mk)

.....

23. The diagram below shows two fused bones of a mammal



(a) Identify the fused bone (1mk)

.....

(b) Name the

(i) Bone that articulates at point labeled **F** (1mk)

.....

(ii) Type of the joint that is found at the point labeled **F** (1mk)

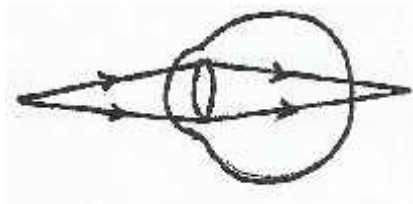
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(iii) The hole labeled **G**
.....

24. Which structure in the ear detects
- a. Sound waves(1mk)
 - b. Change in posture..... (1mk)

25. A certain species of flowering plant relies entirely on sexual reproduction for propagation. The chromosome number of the cell in the ovarian wall is 16. How many chromosomes are in
- (a) The pollen tube nucleus. (1mk)
-
.....

- (b) A cell of the endosperm (1mk)
-
.....

26. The diagram below represents an eye defect.



- (i) Name the eye defect represented (1mk)
-

- (ii) How can the defect be corrected (1mk)
-
.....

27. (a) Distinguish between population and community (2mks)
-
.....

(b) Name the method that can be used to estimate the population size of the following organisms

- (i) Fish in a pond (1mk)
-

- (ii) Black jack in a garden (1mk)
-

28. (a) An individual has blood group **A**.

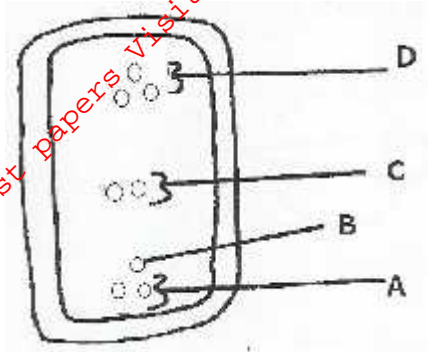
List the possible genotypes.

(1mk)

(b) What is the significance of a test cross.

(1mk)

29. The diagram below shows a mature embryo sac.



(a) Name the part labeled A and D.

(2mks)

A

D

(b) Which of the parts labelled above is fertilized to form a diploid zygote.

(1mk)

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