

MANGU HIGH SCHOOL

**231/2
BIOLOGY
PAPER 2
JULY 2014
TIME: 2 HOURS**

NAME: _____

ADM NO: _____ CLASS: _____

**Kenya Certificate of Secondary Education
Mock Examinations
Biology Paper 2
2 Hours**

INSTRUCTIONS TO CANDIDATES

- Write your name and admission number in the spaces provided.
- Answer **ALL** the questions in **section A** in the spaces provided.
- In **Section B**, answer **Question 6 (Compulsory)** and **either** question **7** or **8** in the spaces provided.

For Examiner's Use only

Section	Question	Max Score	Candidate's Score
Section A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
SECTION B	6	20	
	7	20	
	8	20	
TOTAL		80	

This paper consists of **12 printed pages**. Candidates should check the question paper to ensure that all the pages are printed as indicated and no questions are missing.

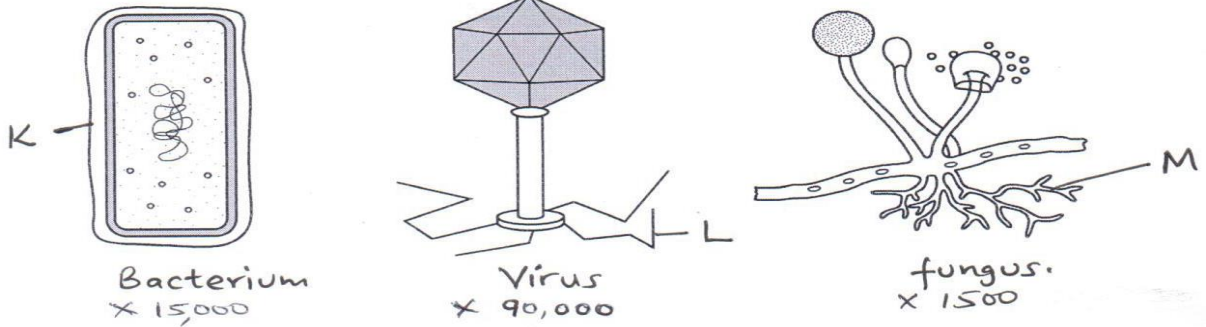
Turn Over

SECTION A

40 MARKS

Answer **all** the questions in the spaces provided.

1. The diagrams below shows a bacterium, a virus and a fungus at different magnifications.



- (a) State which organism is an intracellular parasite of the other two. (1mk)

- (b) State the roles of the structures labeled K, and M. (4mks)

K _____

M _____

N (i) _____

(ii) _____

- (c) Briefly describe the process of reproduction of the fungus. (3mks)

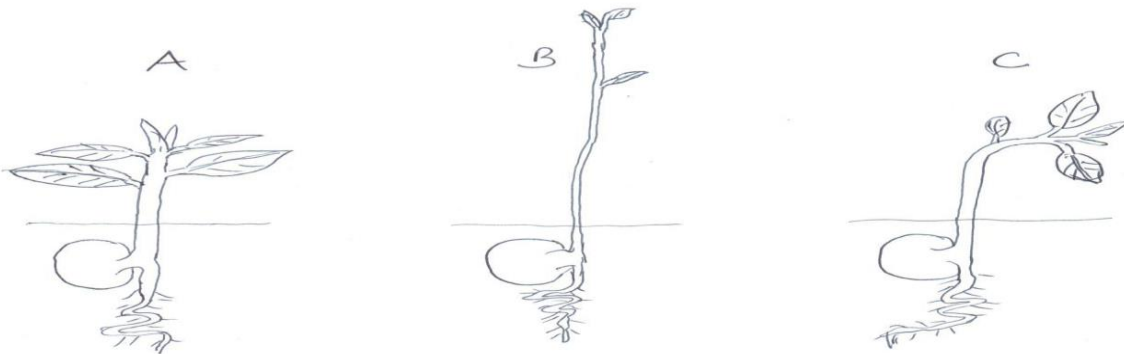
2. (a) (i) What is meant by the term meiosis. (1mk)

(ii) Highlight the role of meiosis in evolution (3mks)

(b) The gene for blood clotting in humans is located on the x-chromosome. A recessive allele of the gene leads to a condition where blood fails to clot properly. i.e. haemophilia.

(i) Using a genetic cross, show that a haemophilic man cannot pass the condition to his sons, if the wife is homozygous normal. (4mks)

3. The diagrams below represent seedlings of broad beans germinated in different conditions.



(a) State the type of germination exhibited by the broad bean (1mk)

(b) (i) Suggest the aim of the experiment (1mk)

(ii) State the condition that each of the seeds was subjected to as they germinated (3mks)

A _____

B _____

C _____

(c) Name the major plant hormones that may have influenced the growth responses of seedlings B and C (1mk)

B _____

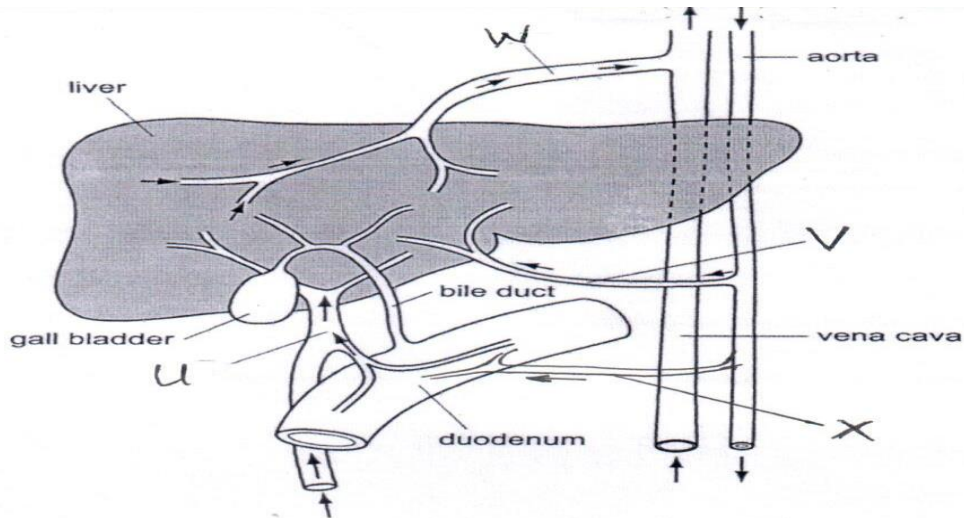
C _____

(d) During the experiment, for each set up, 10 seeds were used. On average 7 germinated and 3 failed to germinate.

(i) Why were 10 seeds used in each case? (1mk)

(ii) Suggest why some seeds never germinated (1mk)

4. The figure below illustrates blood supply to the liver and other organs.



(a) Name the blood vessels U, V, W, and X. (2mks)

- U _____
- V _____
- W _____
- X _____

(b) State two differences in composition of blood in vessel U and vessel V, 6 hours after a person eat a meal with excess proteins and carbohydrates. (2mks)

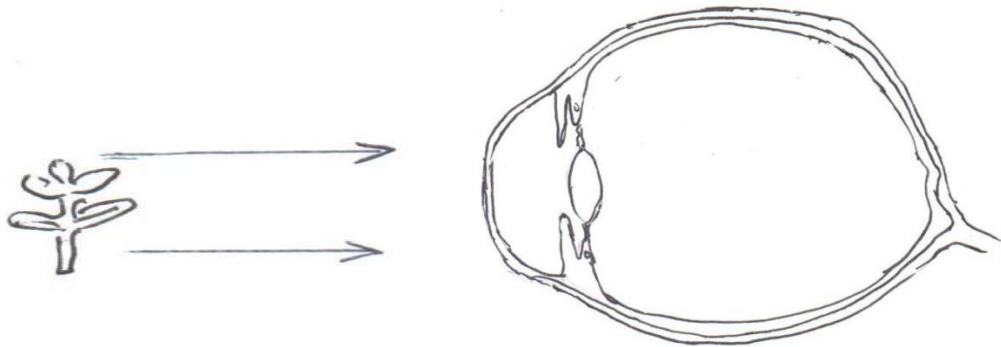
(c) Suggest the main nitrogenous waste in blood vessel W. (1mk)

(d) Two fatal diseases of the liver occur in adults due to inappropriate diet and drug abuse. Name the two diseases and main causative agent. (3mks)

(i) _____

(ii) _____

5. The diagram below represents a section of the human eye and the pathway taken by light rays as they leave a far object.



(a) Complete the diagram by continuing the lines from the object to show how light rays produce an image on the retina. (1mk)

(b) (i) State how the appearance of the pupil would change when a person moves from dim light to bright light. (1mk)

(ii) Name the type of response stated in b(i) above (1mk)

(iii) Describe how the response is brought about (3mks)

(iv) State the importance of the response described in b(iii)above (1mk)

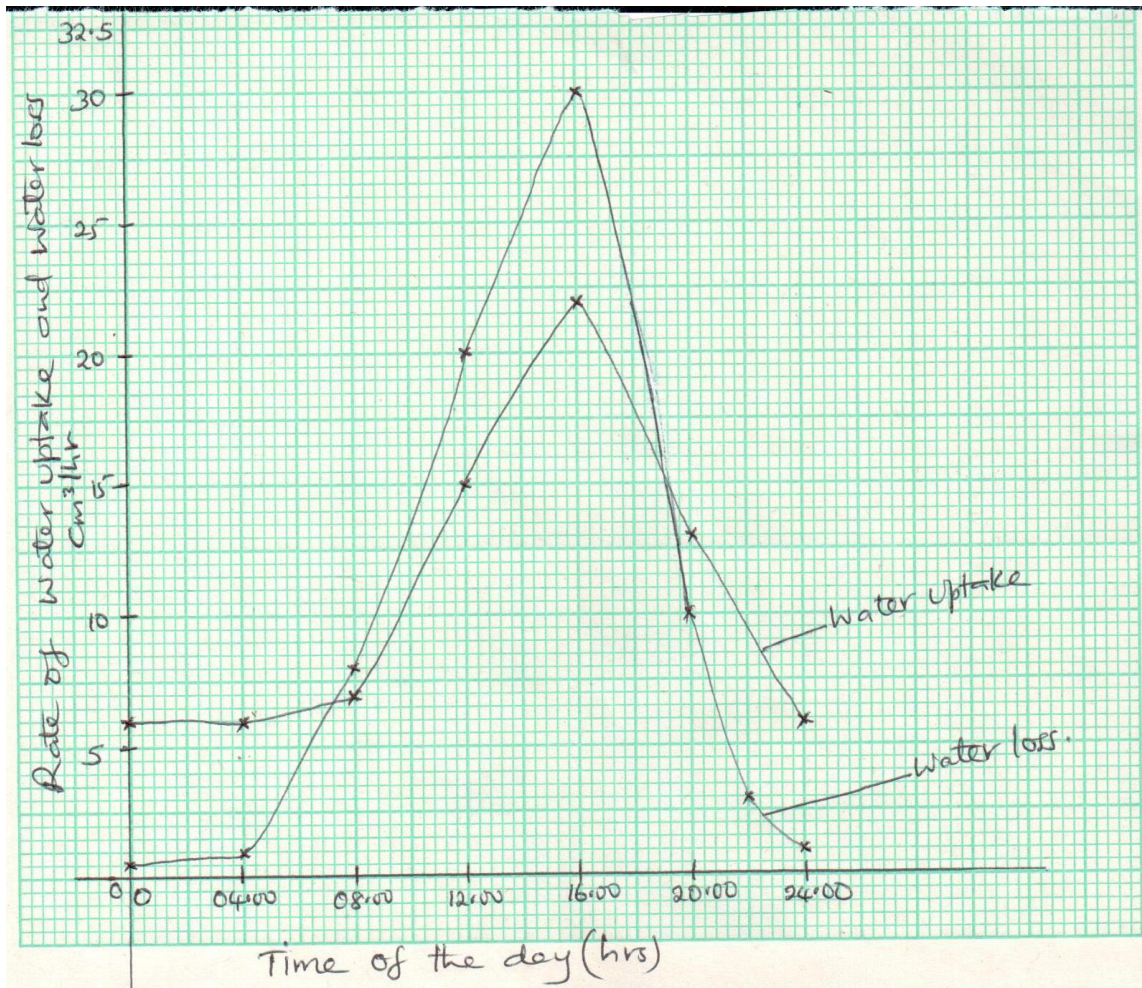
(v) If a person takes a drink laced with methanol, he is unable to undertake the response described in b(iii)above. Explain. (2mks)

SECTION B

40 MARKS

Answer questions **6 compulsory** and **either** question **7** and **8** in the spaces provided after question 8.

6. The graphs below show the rates of water uptake and water loss by a plant over 24 hour period.



- (a) At what time was the rate of water uptake equal to the rate of water loss.

(2mks)

- (b) Account for the shape of the curve of water loss between.
(i) 04.00 hours and 16.00 hours (3mks)

- (ii) 16.00 hours and 22.00hours (2mks)

- (c) (i) State two uses of water within a plant between 00.00hours and 04.00hours (2mks)

- (ii) State two additional uses of water by the plants between 08.00hours and 18.00 hours. (2mks)

- (d) State how the plant would respond if there is prolonged more water loss than water uptake from the soil. (1mk)

- (e) (i) Name one physiological process in mammals that serves same function as transpiration in plants. (1mk)

(ii) Explain how the process stated in (i) above occurs and how it achieves the function (4mks)

(f) Explain how a drug that inhibits activity of posterior pituitary can cause death due to dehydration. (3mks)

7. (a) Describe regulation of osmotic pressure of body fluids in humans. (10mks)

(b) Briefly describe the structure and functions of skeletal and cardiac muscles. (10mks)

8. (a) Describe the structural adaptations of xerophytes to their habitat. (10mks)

(b) With reference to the terms; homologous structures, analogous structures, adaptive radiation, divergent evolution, convergent evolution and stating relevant examples; discuss comparative anatomy as an evidence of evolution. (10mks)

ANSWERS:

Order a copy of answers from www.schoolsnetkenya.com/order-e-copy

NB> We charge Kshs. 100 ONLY to meet website, e-resource compilation and provision costs