

Name:..... Index Number:...../.....

231/1

Candidate's Signature.....

BIOLOGY

Admission Number:.....

(THEORY)

Class:.....

Paper 1

JULY 2015

2 hours



MANGU HIGH SCHOOL

Kenya Certificate of Secondary Education

Mock Examinations

BIOLOGY

Paper 1

2 hours

INSTRUCTION TO CANDIDATES.

- Write your name, index number, admission number and class in the spaces provided above.
- Answer **ALL** the questions in the spaces provided.
- Additional papers must not be inserted.
- This paper consists of 9 printed pages.
- Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
- Candidates should answer the questions in English.

For Examiner's Use only

Questions	Maximum Score	Candidate's Score
1 - 30	80	

1. Name the tissues in plants responsible for:

a) Secondary growth.

(1 mark)

.....

b) Synthesis of carbohydrates.

(1 mark)

.....

c) Controlling the amount of water and mineral salts entering into the vascular tissues in the root.

(1 mark)

.....

2. State the main process that takes place in each of the following parts of the mammalian nephron. (2 marks)

i) Bowman's capsule.

.....

ii) Proximal convoluted tubule.

.....

3. a) i) What is liver cirrhosis?

(1 mark)

.....

.....

ii) State one cause of liver cirrhosis.

(1 mark)

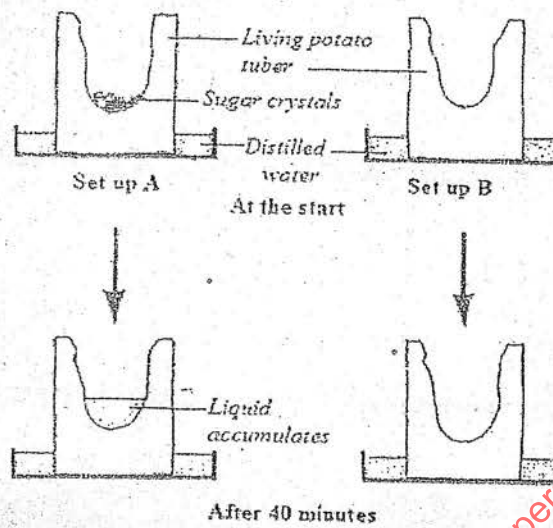
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b) State the causative agent of whooping cough.

(1 mark)

.....

4. The diagrams below show a certain physiological process in plant cells.



Account for the observation in set up:-

a) A.

(3 marks)

b) B.

(2 marks)

5. Name the chemical bond between two amino acids in a protein chain. (1 mark)

6. a) What are homologous chromosomes? (1 mark)

- b) State two causes of variations. (2 marks)

7. a) Describe two reasons for missing fossil records (2 marks)

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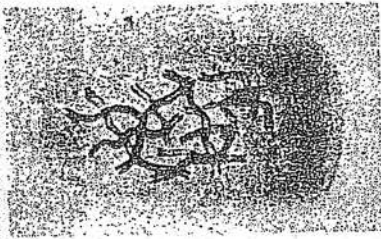
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- b) Give one reason why comparative anatomy is important in the study of evolution. (1 mark)

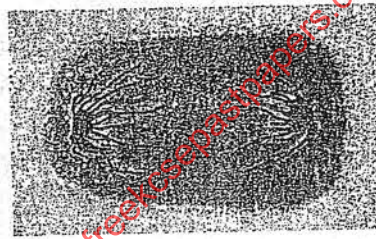
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8. The photomicrographs G and H below show two successive stages of mitosis in a cell from a plant root tip.



G



H

Describe what happens to the chromosomes between the stage in G and H. (3mks)

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.....

.....

9. State one role of each of the following substances in human nutrition. (3 marks)

- a) Roughage.

.....

- b) Vitamins.

.....

- c) Water.

.....

10. a) Name the blood cell that produces antibodies. (1 mark)
-
- b) A patient of blood group B negative was transfused with blood of group O positive. After two weeks a similar transfusion was given to the same patient. State the effect in the patient's blood after the:-
- i) first transfusion. (1 mark)
-
- ii) second transfusion. (1 mark)
-
11. a) Distinguish between egestion and excretion. (2 marks)
-
-
-
- b) Explain the necessity of excretion in living organisms. (1 mark)
-
-
- c) State one symptom that is common to diabetes mellitus and diabetes insipidus. (1 mark)
-
12. State two functions of golgi apparatus. (2 marks)
-
-
13. a) Name the structures involved in accommodation of the eye. (1 mark)
-

b) Name each of the eye defect described below.

(2 marks)

- i) the eye lens becomes cloudy or opaque thus preventing transmission of light rays.

.....

- ii) the eyeball is too long such that light rays from a distant object are brought to focus in front of the retina while those from a near object are clearly focused on the retina.

.....

14. a) Name two organisms that form the biological environment of malaria parasite, *Plasmodium spp.* (2 marks)

.....

.....

- b) Explain why the use of oil on stagnant waters as a control measure for the spread of malaria is being discouraged. (1 mark)

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.....

15. Explain the difference in the energy output between aerobic and anaerobic respiration. (2 marks)

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.....

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16. In an investigation, a potted plant was destarched then exposed to sunlight for three hours. When iodine test was carried out on one of the leaves, it turned blue black.

- a) What does the blue black colour change mean? (1 mark)

.....

- b) Briefly describe how the destarching was carried out. (1 mark)

.....

.....

17. State two reasons for the lag phase of a sigmoid curve of growth of an organism (2 marks)

18. How is the palisade mesophyll layer of a green plant adapted to photosynthesis? (3 marks)

19. State the types of muscles found in:-

a) Stomach wall (1 mark)

b) Biceps (1 mark)

20. a) What is an open circulatory system? (1 mark)

b) Describe two advantages of the heart that enable birds and mammals to be more active than other vertebrates (2 marks)

21. Name the cells produced by cork cambium during secondary growth in flowering plants (2 marks)

22. Explain how each of the following features adapt xerophytes to their natural habitat (2 marks)

a) Presence of superficial roots

b) Sunken stomata (2 marks)

23. The diagram below shows a human tooth



a) i) Identify the tooth (1 mark)

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

b) Describe how the tooth in the diagram is adapted for its function (1 mark)

24. Name the processes that take place during light dependent and light independent stages of photosynthesis (2 marks)

Light dependent state

Light independent stage

25. Giving a reason in each case, name the class to which each of the following organisms belong:

Ostrich:

Reason:

Maize plant:

Reason:

26. State one use of each of the following excretory products of plants. (2 marks)

a) Quinine.

b) Tannins.

27. Name the process involved in ethanol production by yeast cells. (1 mark)

28. a) State the mode asexual reproduction in amoeba. (1 mark)

b) Distinguish between monoecious and dioecious plants. (2 marks)

29. Name the organism that causes syphilis. (1 mark)

30. The diagram below represents a nerve cell.



a) i) Identify the nerve cell. (1 mark)

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

b) Using an arrow indicate on the diagram the direction of movement of an impulse in the cell. (1 mark)