

Name.....Index No.....School.....

231/1

Candidate's Signature.....

BIOLOGY

Date.....Stream.....

Paper 1

(Theory)

2hours

**THE SUKEMO JOINT MOCK EXAMINATIONS**

Kenya Certificate of Secondary Education

BIOLOGY

Paper 1

(Theory)

2 Hours

**Instructions to candidates**

- (a) Write your **name** and **index number** in the spaces provided above
- (b) Sign and write the date of examination in the spaces provided above
- (c) Answer **ALL** questions in the spaces provided
- (d) This paper consists of 9 printed pages
- (e) Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing.

question	Maximum score	Candidate's score
1-28	80	

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Kenya Certificate of Secondary Education

BIOLOGY

Paper 1

1. (a) The study of microorganisms (microbes) is called microbiology. Name any two branches of microbiology. (2mks)

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.....

(b) Name the branch of biology that deals with the study of the Phylogenetic relationship among organism (1mk)

.....

2. (a) state **one** environmental problem that can be solved by studying biology (1mk)

.....

(b) State **two** precautions taken during collection of specimens (2mks)

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3. (i) the liger is an offspring of a lion and a tiger. Explain why the liger is infertile (1mk)

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.....

(ii) Name **two** members of kingdom Protocista (2mks)

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.....

4. (a)(i) State the function of diaphragm in the microscope (1mk)

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(ii) State the advantage of using light microscope over electron microscope (1mk)

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(b) What is the role of cristae in respiration? (1mk)

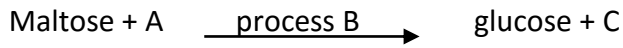
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5. Explain the process of wilting (2mks)

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6. (a) Use the equation below to answer questions that follow (3mks)



Identify:

A.....

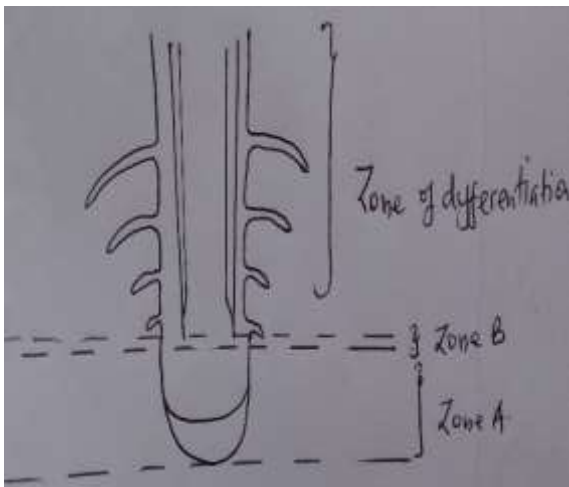
B.....

C.....

(b) Explain why patients who cannot feed orally are given glucose in a drip (2mks)

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7. (a) The diagram below represents the apical growth in a root



(i) What happens to the cells at zone B (2mks)

.....

(ii) Name the hormone produced at zone A that brings about a change in zone B (1mk)

.....

(b) State **two** adaptations of phloem tissue to its functions (2mks)

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8. (a) Distinguish between natural (innate) and natural acquired immunity (2mks)

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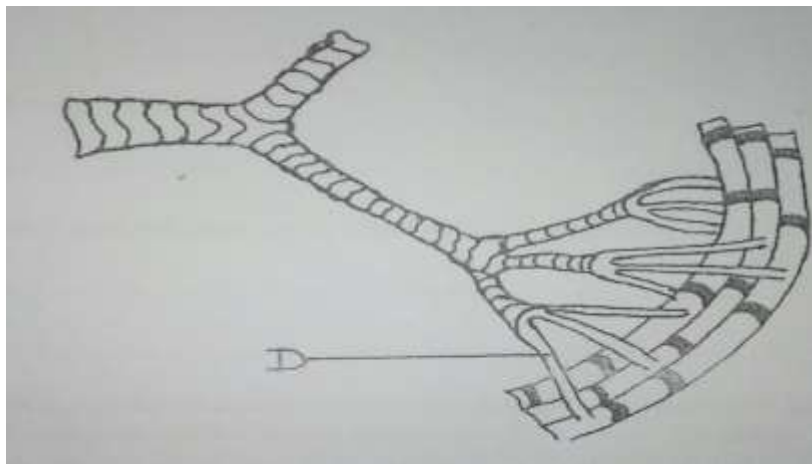
(b) (i) State why it is a disadvantage to have blood group O (1mk)

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.....

(ii) Describe the basic steps in blood clotting in human beings (4mks)

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9. The diagram below is a structure used in gaseous exchange in insects



(a) Identify part labelled D (1mk)

.....

(b) State **one** adaptation of structure D to its function (1mk)

.....

(c) A person who has been smoking for many years was found to have a lot of dust and microorganism in the lungs. Explain (2mks)

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.....

10. (a) Give an equation to show that respiration involves oxidation of a food stuff (1mk)

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.....

(b) How is an energy rich molecule rebuilt after muscle contraction (2mks)

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(c) Name the end products of Krebs's cycle (2mks)

.....

11. (a) Name the excretory product removed through guttation (1mk)

.....

(b) Name the structures in the skin that deals with (2mks)

(i) Temperature regulation

.....

(ii) Excretion

.....

(c) Seals have very thick layer of fatty tissue under the skin. In what way is this useful to them? (2mks)

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.....

12. Below is the life cycle of a pathogen which causes sleeping sickness



(a) (i) Suggest a method which can be used to eradicate/remove the pathogen from people  
 .....(1mk)

(ii) State the phylum to which the pathogen belongs (1mk)

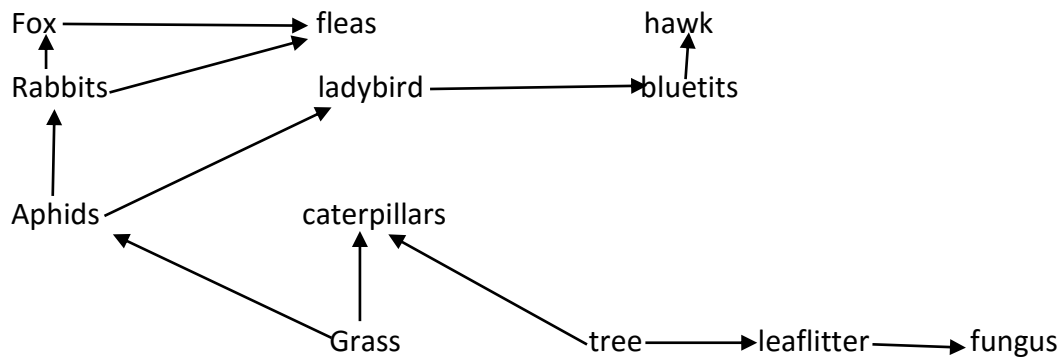
Phylum

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 .....  
 .....

(b) State **two** reasons why green plants are included in a fish aquarium (2mks)

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 .....

(c) Study the diagram below



(i) Name the primary producer (1mk)

.....

(ii) State reasons why not all energy stored in the rabbit's body is transferred to the fox (1mk)

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13. Give the functions of the following ecological instruments (2mks)

(a) Seechi disc

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(b) Photographic light meter

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14. (a) Explain why fertilization must take place in the fallopian tube but not uterus (2mks)

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(b) Explain double fertilization in flowering plants (3mks)

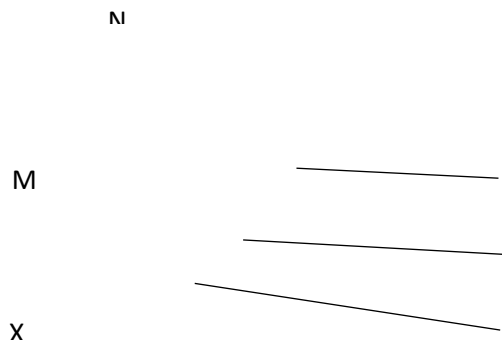
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15. The diagram below represents a mammalian bone of the appendicular skeleton



(a) Name and state the functions of the part labelled M and N (2mks)

...M.....

.....

...N.....

.....

(b) State how the structure X is adapted to its function (1mk)

.....

.....

16. State the **three** main features of cervical vertebra (3mks)

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17. Distinguish between skeletal and cardiac muscles (2mks)

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18. List down **three** phenotypic characteristics that have been selected for the production of strains suitable for modern agricultural purposes (3mks)

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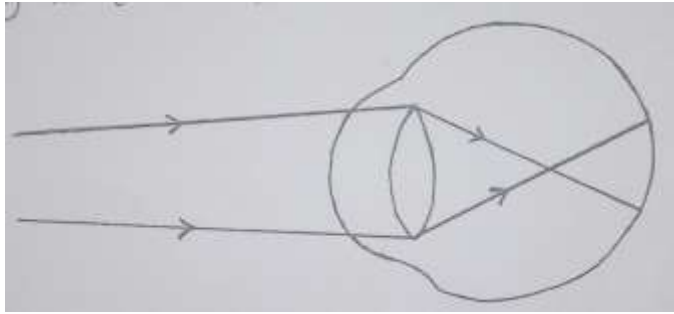
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19. The following experiments were carried out by students.

(a) The student was told to hold a mirror close to the eyes and cover them with hands for about 15 seconds and then remove their hands and open the eyes. State how the size of the two pupils were altered. (2mks)



(b) The diagram shows the position of an image formed in a defective eye



(i) Draw a diagram to show how the defect can be corrected (2mks)

20. Give **two** importance of nastic responses (2mks)

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21. (a) What does Lamarck's idea of evolution emphasize? (1mk)

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(b) What evidence is there to suggest that vertebrates have a common ancestral origin?(1mk)

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22. (a) Name the hormone that sustains the larval stage in insects and the structure that produce it. (2mks)

Hormone.....

Structure.....

(b) State the type of growth which occurs in insects (1mk)

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