

CROSS COUNTRY EXAM 2014
BIOLOGY
PAPER II
TIME: 2 HOURS
MAY/JUNE 2014

NAME:.....ADM.NO:.....CLASS:.....

INSTRUCTIONS

FOR EXAMINER'S USE ONLY

80 MARKS

SECTION A

1. a) What is immunity to a disease (1mk)

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b) Distinguish between the following types of immunity

(i) Natural immunity (1mk)

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(ii) Artificial immunity (1mk)

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2. The figure below represents a transverse section of a root

i) Name the parts labeled A, B and D (3mks)

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ii) State the role of the part labeled C (1mk)

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3. a) Define the term balanced diet (2mks)

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b) Explain the importance of each of the following during digestion in human beings
(i) Teeth (1mk)

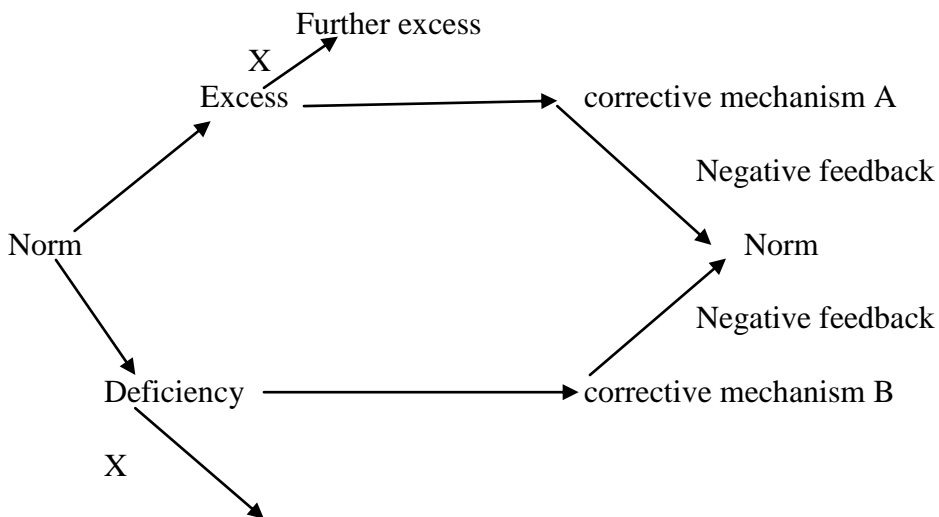
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ii) Saliva (2mks)

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c) State the role of each of the following in photosynthesis (3mks)
(i) Light

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ii) Chlorophyll

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iii) Carbon (IV) oxide

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4. Study the diagram below and answer the questions that follow



Further deficiency

a) Name the principle labeled X (1mk)

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b) If the above diagram represented blood sugar regulation
(i) State the corrective mechanisms carried out at A (2mks)

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ii) The condition that may result from the further excess (1mk)

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iii) the hormone that would be responsible for correcting the deficiency (1mk)

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c) Give the reasons as to why plants have less elaborate excretory systems as compared to animals (3mks)

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5. a) State two effects of air pollution to plants (2mks)

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b) Name two human activities that cause soil pollution (2mks)

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c) How is plasmodium adapted to cause malaria (2mks)

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d) State two ways of controlling the transmission of typhoid (2mks)

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SECTION B

6. The data below shows results obtained from a plant species which was planted around a homestead to serve as a hedge. The hedge was divided into part I, II and III. The three parts were treated as indicated in the table and the results collected after 3 years

Part	Treatment	Percentage cover in the 1 st 2 metres from the ground	Average width in metres	Average height in metres
I	Untrimmed throughout	3%	0.5	5.0
II	Trimmed twice annually	55%	0.9	3.5
III	Trimmed throughout	85%	1.5	2.5

a) Give three deductions one would draw from the above results (3mks)

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b) Explain the effects of the following on percentage cover; width of hedge and height of plants

(i) Lack of hedge trimming (3mks)

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(ii) Frequent hedge trimming

(4mks)

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c) Using a germinating bean seedling with a 2cm long radical; describe how you would investigate the region of growth on the radical (5mks)

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d) Name the kind of growth curve obtained
(i) for arthropods when changes in length of body plotted against time (1mk)

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ii) Give reason as to why this kind of curve is obtained for arthropods (2mks)

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iii) Name the hormone that inhibits metamorphosis in insects and where it is produced

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ANSWERS:

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