Name..... Index Number.....

Candidate's Signature..... Class.

.....

231/3

Date.....

BIOLOGY

Paper 3

(Practical)

March, 2014

1¾ hours

Mini-Mock Examination, 2014

KenyaCertificateof Secondary Education (K.C.S.E.)

Instructions to candidates

- *Write your name,classand index number in the spaces provided above.*
- *Sign and write the date of examination in the spaces provided above.*
- *Answer ALL questions in the spaces provided.*
- *Additional pages MUST NOTbe inserted.*
- *You are required to spend the first 15 minutes of the 1¾ hours reading the whole paper carefully before commencing your work.*
- *Candidates will be penalized for incorrect spellingespecially of technical terms .*

For Examiner's Use Only:

Question	Maximum Score	Candidate's Score
1	14	
2	11	
3	15	
Total score	40	

This paper consists of 6 printed pages.
Candidates should check the question paper to ascertain that ALLthe pages are printed as indicated and NO questions are MISSING

1) You are provided with solutionsX,Y and Z . Z is the same as Y except that Z has been boiled.

Label three test-tubes A,B and C

Into the test-tube labeled A add 1ml of solution X

Into the test tube labeled B add 1ml ofXand 1ml of Y

Into the test-tube labeled C add 1ml ofX and 1ml of Z

a) Withdraw two drops from test-tube A and placeon a white tile. Add two drops of iodine solution. Repeat the procedure with the contents in test-tubes B and C. Record your observations in the table below. (3mks)

Test tube	Observations	Conclusions
A		
B		
C		

Place the three test-tubes labeled A, B and C in a water bath at 37^{0}C.

Ensure that thetemperature of the water bath does not fall below 35^{0}C orexceed 38^{0}c.Leave the set upfor 40 minutes.

b) After 40 minutes, test the contents of each of the test-tubes labeled A ,B and C following the procedure in (a) above. Record your observations in the table below. (3mks)

Test tube	Conclusions	observations
A		
B		
C		

c) Account for the results at the end of the experiment in the test tube labeled:

(i) B (1 mark)

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(ii) C (1mark)

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(d) (i) Suggest the identity of solution Y.
(1mark)

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(ii) Givetwo reasons foryour answer in (d) (i) above. (2 marks).....

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(e) (i) Name two areas in which the process being investigated in this experiment takesplace inthe human body. (2 marks)

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f) State the importance of the process being investigated above to germinating maize seeds. (1 mark)

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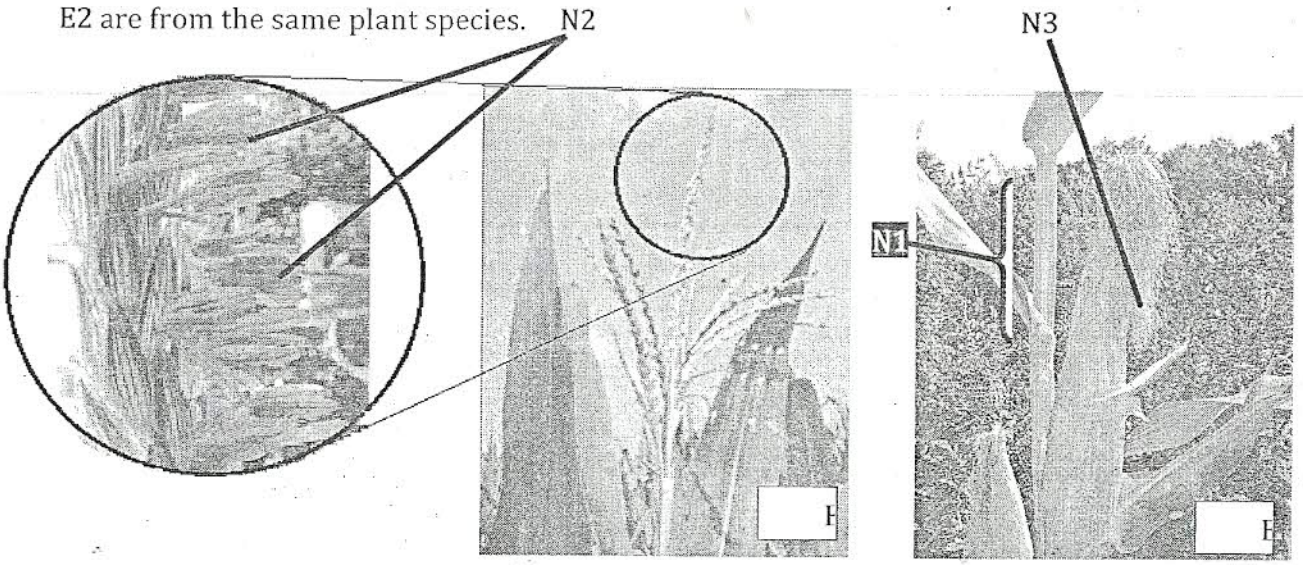
2) The photographs below are of flowers from a species of plants; *Zeamais*. FlowersE1 and E2 are from the same plant species.



a) Identify the flowers type in photograph E1 and E2. {2 marks}

b) E1 ..... E2.....

c) Name the part labeled; {3 marks}

N1. ..... N2..... N3.....

d) Suggest the likely agent of pollination of *Zeamais*. .... {1 mark}

e) From observable features ONLY, explain how *Zeamais*flower(s) is/are adaptedto the agent of pollination named in (d) above. {2 marks}

i. .....

ii. .....

f) Name the type of germination exhibited by seeds obtained from *Zeamais*. (1 mark}

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g) Calculate the magnification shown in flower E1. {2 marks}

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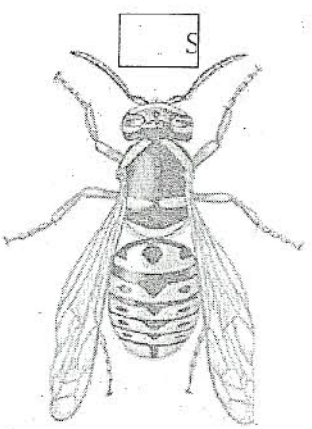
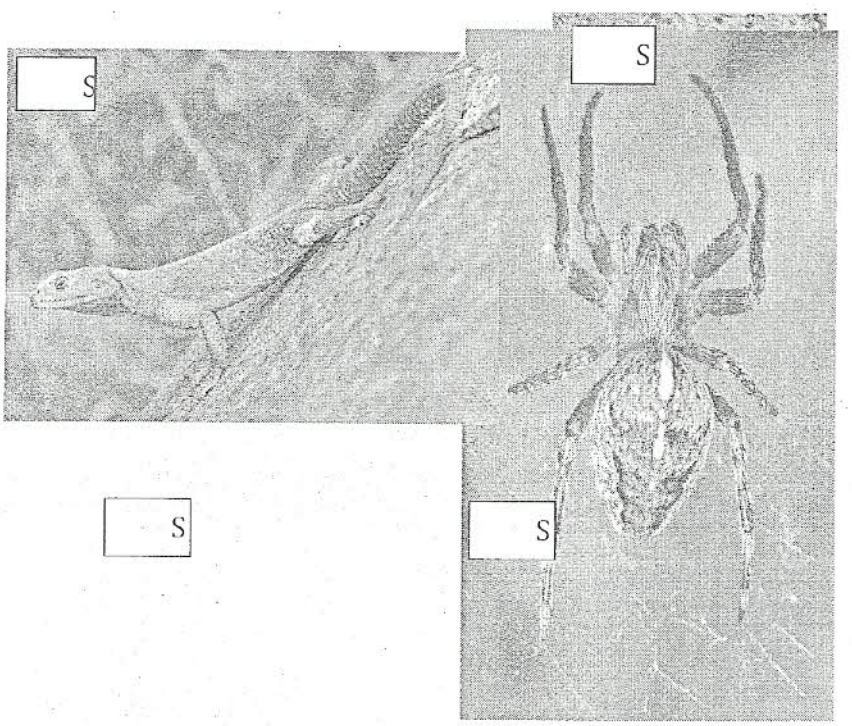
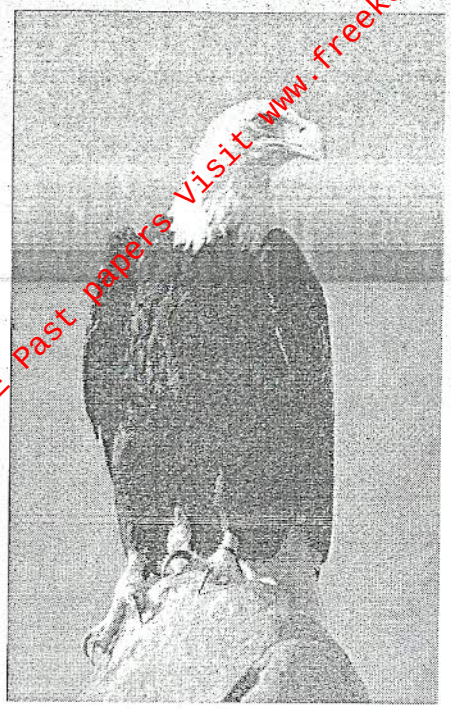
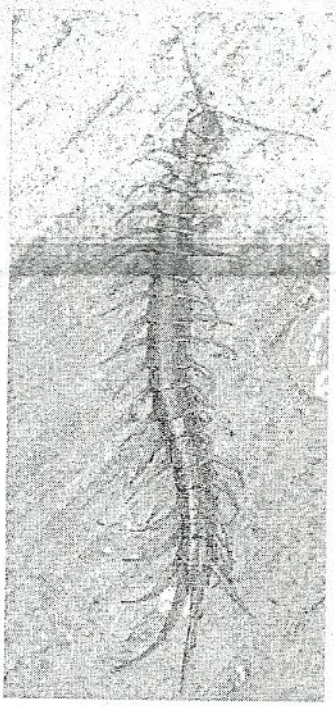
3) Study the specimens below and answer the questions that follow.





S S





a) Using the above specimens, construct a reasonable food chain containing the first five trophic levels. {1 mark}

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b) From the food chain, identify the organism with the least biomass. Explain your answer {2 marks}

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c) State two observable differences betweenS2 and S4. {2 mark}

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d) Classify the following organisms in the taxa below.

{3marks}

Specimen	Kingdom	Phylum	Class
S2	Animalia		
S3	Animalia		
S4	Animalia		

e) State TWO differences between Specimen S3 and S5. {2 marks}

i. .....

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ii. .....

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f) State anyTHREEsimilarities between Specimen S1 and S6. {3 marks}

i. .....

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ii. .....

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iii. .....

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g) State the role of the following in the life cycle of SI.{2 marks}

(i) juvenille hormone.....

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(ii) Moulting hormone.....

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Confidential

Each candidate will require the following

- 4 test-tubes
- 1 measuring cylinder capable of measuring 1ml
- 10ml of solution X
- 10ml of solution Y
- 10ml of solution Z
- 300 – 400ml of water
- 1 test-tube rack
- means of timing in minutes (a wrist watch or a wall clock visible to all candidates)
- A thermometer (0 – 110^0c)
- A source of heat (water bath)
- A tripod stand
- A wire gauze
- A white tile
- Means of labeling

- Test-tube holder
- A dropper
- Preparing solutions X, Y and Z

  Solution X: To be prepared on the morning of the examination.

  To prepare 1 litre of solution X, take 200g of soluble starch and add it to 1 litre of water.

  Solution Y: To be prepared on the day before the exam.

  To prepare 1 litres of solution y, take 100g of diastase enzyme dissolve in 1 litre of distilled water.