Name…… **Index No. …….**

School ……...

231/3
BIOLOGY
PAPER 3
(PRACTICAL)
1 ¾ HOURS

Kenya Certificate of Secondary Education (K.C.S.E)

INSTRUCTIONS TO CANDIDATES

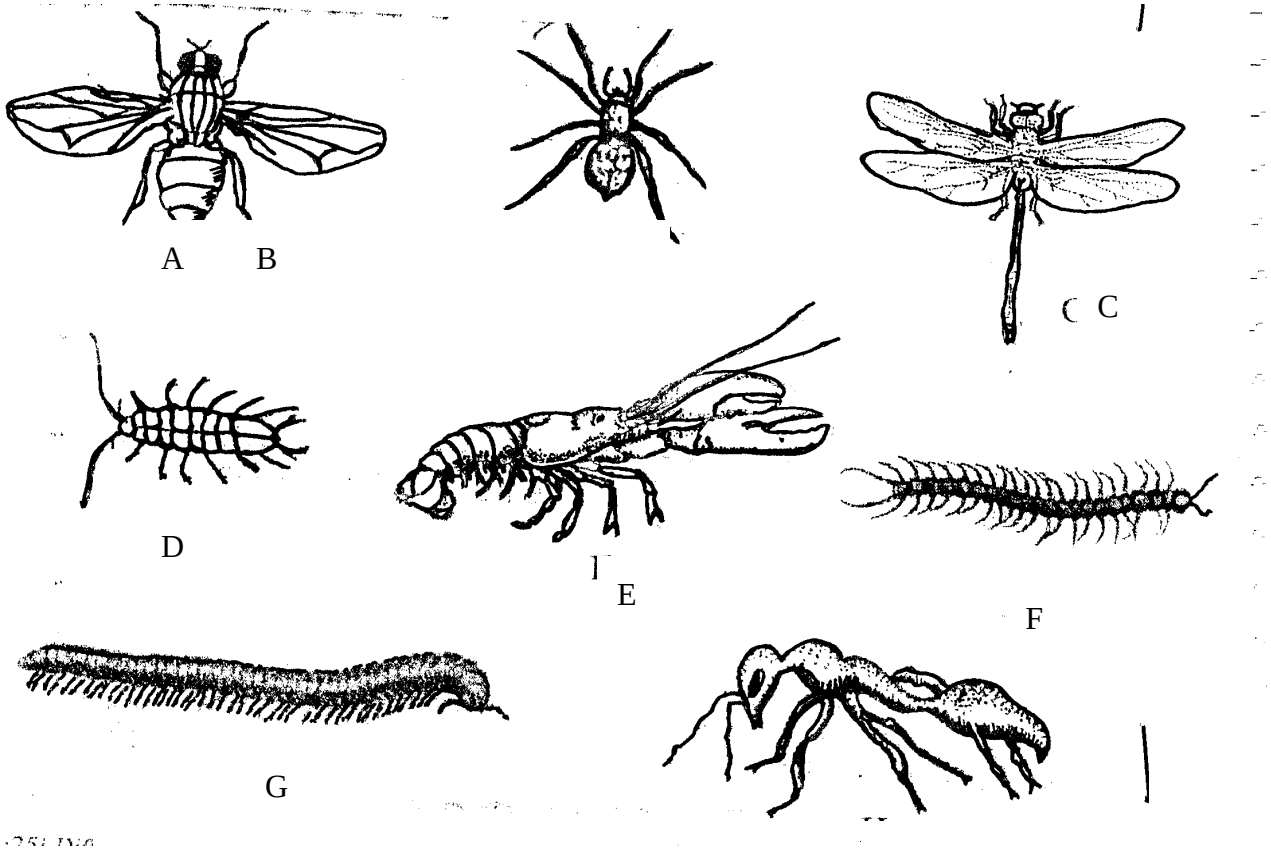
- Write your name and index number in the spaces provided at th
- e top of this page.
- Answer all the questions.
- You are required to spend the first 15 minutes of the 1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work.
- Answers must be written in the space provided in the question paper.

For Examiner's Use only.

Question	Maximum Score	Candidate's Score
1	12	
2	14	
3	14	
TOTAL SCORE		

This paper consists of 8 printed pages.
Candidates should check the question paper to ensure that all pages are printed as indicated
and no questions are missing

1. You are provided with photographs of animals which belong to the same phylum. Study the photographs and the dichotomus key below to enable you identify the taxonomic group to which each animal belongs.



KEY

1. (a) Animae with wings …… go to 2
   (b) Animae without wings …… go to 3

2. (a) With one pair of wings …… Diptera
   (b) With two pairs of wings …… Odonata

3. (a) With three pairs of legs …… Isoptera
   (b) With more than 3 pairs of legs ……..……. Go to 4

4. (a) With four pairs of legs…….. Arachnida
   (b) With more than four pairs of legs ……. Go to 5

5. (a) With two pairs of antennae …….. go to6
   (b) With one pair of antennae …… go to 7

6. (a) With six pairs of legs ……. Water shater

(b) With ten pairs of legs ……. Fresh water shrimp.

7. a) With a cylindrical body …… Diplopoda

b) With dorso-ventrally flattened body ……. Chilopoda

a) Identify the following animals. In each case show in sequence the steps in the key that you followed to arrive at the identity of each animal.

(9mks)

Identity	Steps followed
C	
D	
G	

b) (i) Using observable features only, state the phylum to which the animals on the photograph belong.

(1mk)

Phylum …….

(ii) State two observable features that enabled you to arrive at the answer in b(i) above.

(2mks)

(i)

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(ii)

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2. You are provided with 20% glucose solution about 2.0grams of substance labelled J and solution labelled K place 20cm^3 of glucose solution in a boiling tube. To the boiling tube add 2.0g of substance. Tightly fit a rubber stopper carrying a delivery tube to the boiling tube. Place the boiling tube in a water bath maintained at 35^0 to $40C^0$. Place the delivery tube into a test tube containing 1.0cm^3 of solution K. Allow the set up to stand for twenty minutes.

a) Record your observations.

(2mks)

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b) (i) What conclusion would you draw for your observations in (a) above?(2mks)

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c(i)Name the biological process that took place in the boiling tube.

(2mks)

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(ii) Explain the process you have named in c(i).

(2mks)

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d) Suggest the identity of J.

(1mk)

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e) (i) Suggest a reason why the temperature range in this experiment was maintained between 35^0 and 40^0.

(2mks)

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(ii) With reasons, suggest the expected results if the experiment was performed at:

(4mks)

O^0C

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Reason

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……

100^0C

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Reason

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3. You are provided with two specimens labelled P and R. Study them carefully and answer the questions that follow.

a) Make a longitudinal section of specimen P . Observe and make well labelled drawing of the cut section.

(4mks)

b) Name the agent of dispersal of specimen P.

(1mk)

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c) Name the type of placentation of P.

(1mk)

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d) Squeeze contents of specimen P into a clean 100ml beaker. Use the reagents provided to identify the food substance contained in the extract.

Treatment	Observation

(ii) Identify the food substance (s) present in specimen P

(1mk)

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e) Cut the stem of specimen R into two pieces. Using your fingers, squeeze one piece strongly.

(i) Record your observations.

(1mk)

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(ii) From your observations suggest how the specimen R is adapted to its habitat.

(2mks)

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