

Name: ADM No.

School: Date: Candidate's Sign

231/3
BIOLOGY
PAPER 3 (PRACTICAL)
FORM 4
MARCH / APRIL 2013
TIME: 2HOURS

**WESTERN ZONE JOINT EXAMINATION - 2013
(WEZOJE)
Kenya Certificate of Secondary Education (K.C.S.E)**

INSTRUCTIONS TO CANDIDATES

1. Write your name, School and Index Number in the spaces provided above.
2. Sign and write the date of examination in spaces provided above.
3. Answer **ALL** the questions in the spaces provided.
4. Answers must be written in the spaces provided in the question paper.
5. Additional papers **MUST NOT** be inserted.

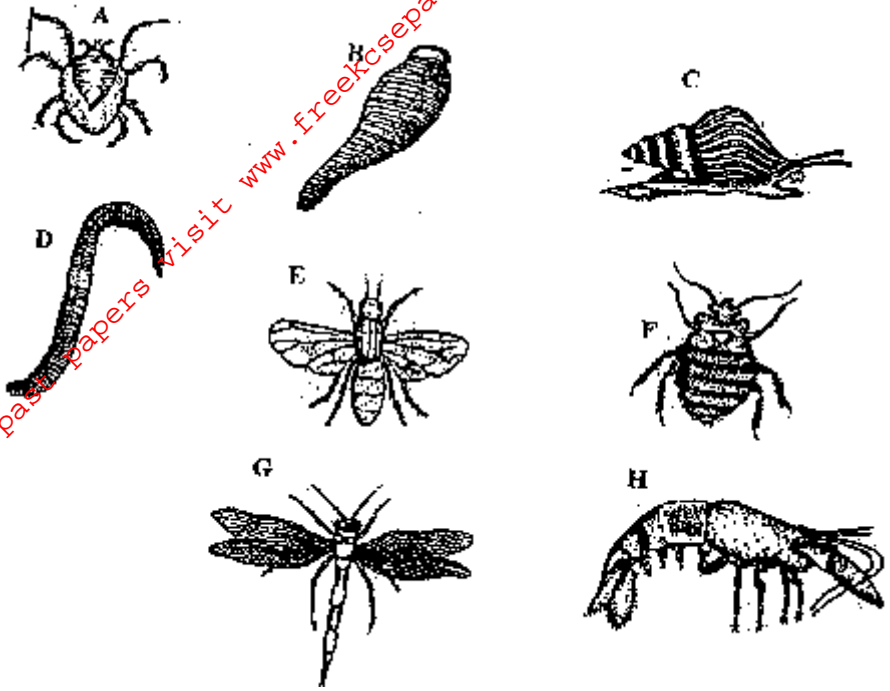
FOR EXAMINER'S USE ONLY

Question	Maximum Score	Candidate's Score
1 - 4	40	

*This paper consists of 4 printed pages.
Candidates should check the question paper to ensure that all pages are
printed as inticated an no questions are missing.*

Question 1.

Below are photographs of various animals. Study the pictures carefully and use the dichotomous key shown below to identify the organisms.



1. a) Jointed legs present Go to 2
 b) Jointed legs absentGo to 6
2. a) Three pairs of legsGo to 3
 b) More than three pair of legsGo to 5
3. a) Wings presentGo to 4
 b) Wings absentBed bug
4. a) Two pairs of wingsDragonfly
 b) One pair of wings Housefly
5. a) Antennae presentCrayfish
 b) Antennae absentMile
6. a) Shell present Snail
 b) Shell absent Go to 7
7. a) Prominent clitellum visibleEarthworm
 b) No clitellum visibleLeech

Fill the table below to identify the organism

(10marks)

Organism	Identity	Steps followed
A		
E		
F		
G		
H		

b) With reasons state the phylum of specimen H
Phylum (1mark)

c) Reasons (2marks)

Question 2

You are provided with:-

- A piece of mammalian fresh liver (4cm x 4cm) labeled P₁
- 15m/s of 3% hydrogen peroxide (H₂O₂)
- Dilute hydrochloric acid (HCL)
- Dilute sodium hydroxide (NaOH)
- Distilled water
- Means of heating
- Means of labeling
- Test tube holders
- Razor blade; A ruler
- 4 boiling tubes.

Prepare four boiling –tubes as below and label them A, B, C, D

Boiling tube A – Add 3ml of 3% H₂O₂ + 2ml dilute HCL

Boiling tube B – Add 3ml of 3% H₂O₂ + distilled water

Boiling tube C – Add 3ml of 3% H₂O₂ + dilute NaOH

Boiling tube D – Add 3ml of 3% H₂O₂ + distilled water.

a) From specimen P₁ provided, cut four cubes of size 1cm x 1cm x 1cm. Drop one piece into each of the test-tubes A, B and C. Record your observations in the table below. (3marks)

Tube	Observations
A	
B	
C	
D	

b) Boil the fourth cube of specimen P₁ in water in a boiling tube for 3 minutes. Remove it from water, cool it and drop it in tube D. Record your observations. (3marks)

c) Account for your results in tubes B and D
Tube B (1mark)

Tube D (1mark)

d) Account for the results in tubes A and C (2marks)

e) i) What would be the effect of grinding specimen P₁ on the rate of reaction in tube B? (2marks)

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

(1mark)

f) Suggest the optimum pH for the enzyme reaction in this experiment (1mark)

g) i) Give a word equation for the reaction between hydrogen peroxide and catalase enzyme. (1mark)

ii) What is the significance of the above reaction in living organisms? (2marks)

Question 3

You are provided with:

- A ripe tomato fruit labeled S
- A matured legume pod (labeled T)
- A mature orange fruit labeled U
- A mature pawpaw fruit labeled Y
- A razor blade
- A ruler

a) Observe specimen S and T carefully

i) With reasons in each case state the agent of dispersal
Specimen S (1mark)

Reasons (2marks)

Specimen T
Agent (1mark)

Reasons (2marks)

ii) Give one advantage that the method of dispersal of specimen S has over that of specimen T (1mark)

iii) What are the differences between specimen S and T (2marks)

b) Make a cross section through specimen S into two halves
i) Draw and label one of halves. (3marks)

c) Name the type of presentation in specimen S (1mark)