

NYATIKE SUB-COUNTY PRE-MOCK EXAMS

231/3

BIOLOGY

PAPER 3

PRACTICALS

MARCH /APRIL 2014

CONFIDENTIAL INSTRUCTIONS TO SCHOOLS

-The information contained in this paper is to enable the head of school and teacher in charge of Biology to make adequate preparations for this year's Biology mock practical examination. NO ONE ELSE should have access to this paper or acquire knowledge of its contents. Great care must be taken to ensure that the information herein does not reach the candidates either directly or indirectly.

-The Biology teacher is NOT expected to perform the experiments

- The apparatus required by each candidate for the Biology mock practical examination are set out on the next page. It is expected that the ordinary apparatus of a Biology laboratory will be available.

- The Biology teacher should note that it is his/her responsibility to ensure that each apparatus acquired, for this examination agrees with specifications on the next page.

Each candidate will require the following:

- Starch solution T
- NaCl
- Iodine Solution
- Benedicts solution
- Distilled water
- White tile
- 3 test tube
- Diataseenzyme (L
- Test tube rack

Name..... Index No:.....

231/3

Candidate's Signature

BIOLOGY

Date:

Paper 3

(Practical)

JULY/AUGUST 2014

Time: 1 ¾ Hours

NYATIKE SUB -COUNTY JOINT EVALUATION EXAM

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

Biology
Paper 3
Practical
1 ¾ Hours

INSTRUCTIONS TO CANDIDATES

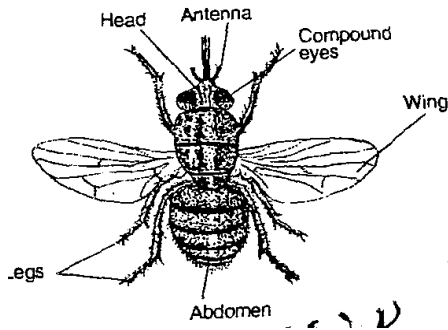
- Answer *all* the questions in the spaces provided.
- You are required to spend 15 minutes of the 1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work.
- Answer must be written in the spaces provided.
- Additional pages must not be inserted.

For Examiners Use Only

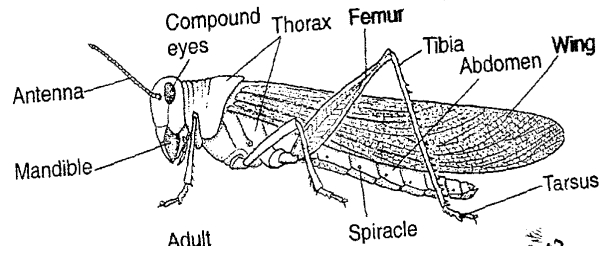
Question	Maximum score	Candidate's score
1	14	
2	16	
3	10	
TOTAL		

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

1 (a) Study the photographs below for specimen R and S



Specimen R



Specimen S

i) State **two** observable differences between the specimen R and S (2mks)

Specimen R	Specimen S

ii) Suggest the advantage of the adaptations on the limbs of specimen S (2mks)

.....

b) i) Name the phylum and the class to which the specimens belong

Phylum

Class.....

ii) State **two** distinguishing features found in the members of

Phylum

Class.....

Complete	Incomplete

State the specimen that exhibit;

i) Complete metamorphosis (1 mk)

.....
.....

ii) Incomplete metamorphosis (1 mk)

.....
.....

2. You are provided with a solution T and sodium chloride in two different concentrations 0.1% and 1.4%. Place 3ml of starch solution in a test-tube labeled 1,2 and 3. Add 3 drops of 0.1% sodium chloride to test tube labeled 2 and 1.4% sodium chloride solution to test tube labeled 3. Add 3ml of solution L to each test tube labeled 2 and 3

a) Place a drop of the contents from each test tube 1,2 and 3 on a white tile. To each drop add iodine solution. Record your result in the table below (3mks)

Test-tube	Treatment	Observation at start of experiment	Observation at end of experiment
1	Starch		
2	Starch to 1.0% NaCl + L		
3	Starch+ 1.4%NaCl+ L		

b) Place the test tubes in water bath maintained at 37°C. Allow to stand for 30 minutes. Place a drop of the contents from each test tube on a white tile. To each drop add iodine solution. Record your observations in the table above

c) Add equal amounts of Benedict's solution in test tubes labeled 2 and 3 and boil. Record your observation below

Test —tube 2 (1mk)

.....
.....

Test —tube 3 (1mk)

.....
.....

d) Why was the test tube labeled 1 included in the experiment (1mk)

.....
.....

e) Account for the results in test tube 1,2 and 3 at the end of the experiment (4mks)

.....
.....
.....
.....

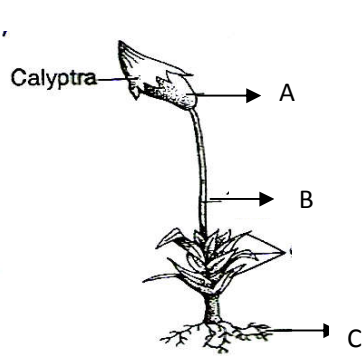
f) Suggest the identity of solution L (1mk)

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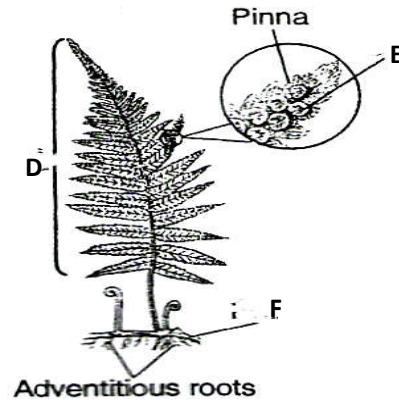
g) Why were the test-tubes placed in a water bath maintained at 37°C (1mk)

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3 (a) (i) On diagram P and Q label the parts A,B,C,D,E and F (3mks)



Specimen P



Specimen Q

ii) Name the divisions of P and Q (2mks)

P.....

Q.....

b) From the diagram name the organ of reproduction (2mks)

P.....

Q.....

c) On diagram P show the part representing gametophyte and sporophyte (2mks)

d) Name the gametophyte of specimen Q (1mk)

Q..... (1mk)

**NYATIKE SUB-COUNTY JOINT EVALUATION EXAM
BIOLOGY PAPER THREE
JULY /AUGUST 2014
MARKING SCHEME**

1 (a) (i)

SPECIMEN R	SPECIMEN S
No spikes on legs Hind legs not muscular	Spikes on legs Hind legs muscular

- (ii) - Spikes for protection from predators (1mk)
- Strong muscular limbs for strong leaping when taking off during flight (1mk)

(b) (i) Phylum: Arthropoda (1mk)

Class : insect (1mk)

- (ii) - Has segmented bodies (1mk)
- Jointed appendages (1mk)

(c) (I)

Complete	Incomplete
1 eggs hatched to larva,pupa and then adult Larva and pupa no similar to adult	Egg hatches to nymph Nymph similar to adult

(ii) K – housefly – 1mk

(iii) S – locust (1mk)

2. (a)

Test –tube	Treatment	Observation at start of experiment	Observation at the end
1	Starch	Blue – black	Blue – black
2.	Starch + NaCl + I	Blue – black	Traces of yellow brown
3	Starch + 1.4% NaCl + L	Blue-black	Colour of iodine

(c) Test tube 2

Yellow (1mk)

Test tube 3 orange (1mk)

(d) Control experiment

(e) No enzyme activates/cofactor added and L in test tube/ hence starch not broken down.

Little enzyme activator/cofactor added 0.1 % and L in test tube 2 hence little starch is broken hydrolysed.

More enzymes activator/confactor and L added in test tube 3 hence all starch hydrolysed (4mks)

(f) L – enzyme /amylase/diastase

(g) to provide optimum temperature.

3 (a) A – Capsule

B – Rhizoids

C – Rhizome

(b) D – Bryophyta

Q – Pteridophyta

(c) Gaetophyte of Q

Prothalus.