

Name.....

Index No.

School

Date.....

Sign.....

231/3
BIOLOGY
PAPER 3
PRACTICAL
JULY / AUGUST 2012
Time: 2 Hours

BORABU-MASABA DISTRICTS JOINT EVALUATION TEST– 2012
Kenya Certificate of Secondary Education (K.C.S.E)

INSTRUCTIONS TO CANDIDATES

- Write your name and index number in the spaces provided
- Sign and write the date of examination in the spaces provided above.
- Answer all questions in the spaces provided in the question paper.
- You are required to spend the first 15 minutes of 1 % hours allowed for this paper reading the whole paper before commencing your work.
- Answers MUST be written on the spaces provided after each question.
- Candidates may be penalized for recording irrelevant information and incorrect spelling especially of technical terms.

FOR EXAMINERS USE ONLY

QUESTION	Max Score	Candidate Score
1	16	
2	12	
3	12	
TOTAL SCORE	40	

*This paper consists of 8 printed pages.
Candidates should check the question paper to ensure that all pages are printed as indicated*

1. **You are provided with:**

- Solution A
- Benedict's solution labeled solution B
- Solution C
- 0.1 % NaCl solution
- 1.4 % NaCl solution
- Iodine solution labeled solution E

Label three test tubes P, Q and R. Into each test-tube, place 3ml of the solution C

- (a) Put a drop of solution P on a white tile and add a drop of iodine solution E. Repeat the procedure for each test tube Q and R.

Record your observations in the table below.

Test- tube	Observation
P	
Q	
R	

- b) To test tube Q add 3 drops of 0.1% sodium chloride solution and 2ml of solution A. To test tube R, add three drops of 1.4% sodium chloride solution and 2ml of solution A. Place the test tubes P, Q and R in a water bath and maintain at 37°C for 30 minutes. Using a drop of the solution from each test tube. repeat the procedure in (a) above and spare the rest for the next question. Record your observations in the table below. (3mks)

Test- tube	Observation at end of experiment
P	
Q	
R	

- c) Put 2cm³ of solution from test tubes P in a clean test tube and add 2cm³ of benedicts solution B, shake then heat the mixture to boil in a hot water bath. Record your final observations in the table below.

Repeat the procedure for solution Q and R.

(3mks)

Test- tube	Find observation after the experiment
P	
Q	
R	

d) Why was the test tube P included in the experiment?

{1mk}

e) Account for observations made in test tube Q and R at the end of the experiment.

{4mks}

i) Test tube Q

ii) Test tube R.

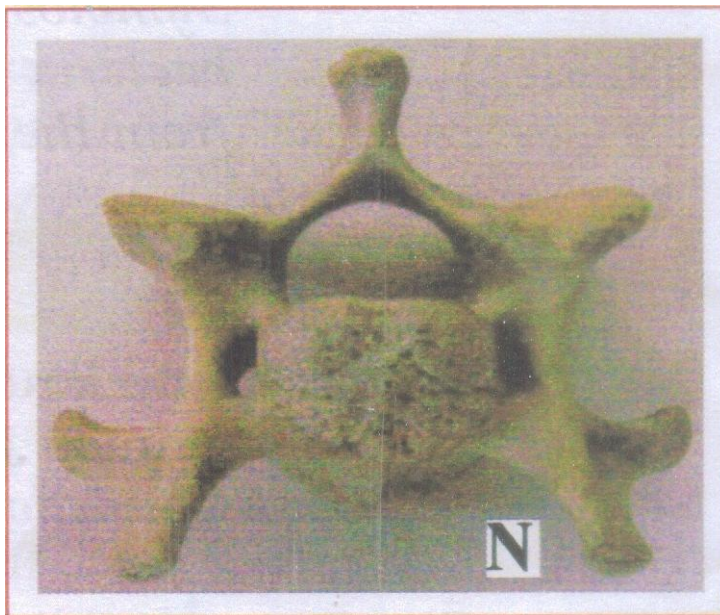
f) Suggest the identity of solution A.

{1 mk}

g) Why was the water bath maintained at 37°C?

{1 mk}

2. You are provided with photographs of specimen labelled M and N obtained from the same animal. Examine them carefully.



- a) Identify the specimens and in each case name the region of the body from which it was obtained. {4mks}

Specimen M:

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Region:

.....

Specimen N:

.....

Region:

.....

b) State two features of specimen **N** which adapt it to its functions. {2mks}

i)

.....
.....

ii)

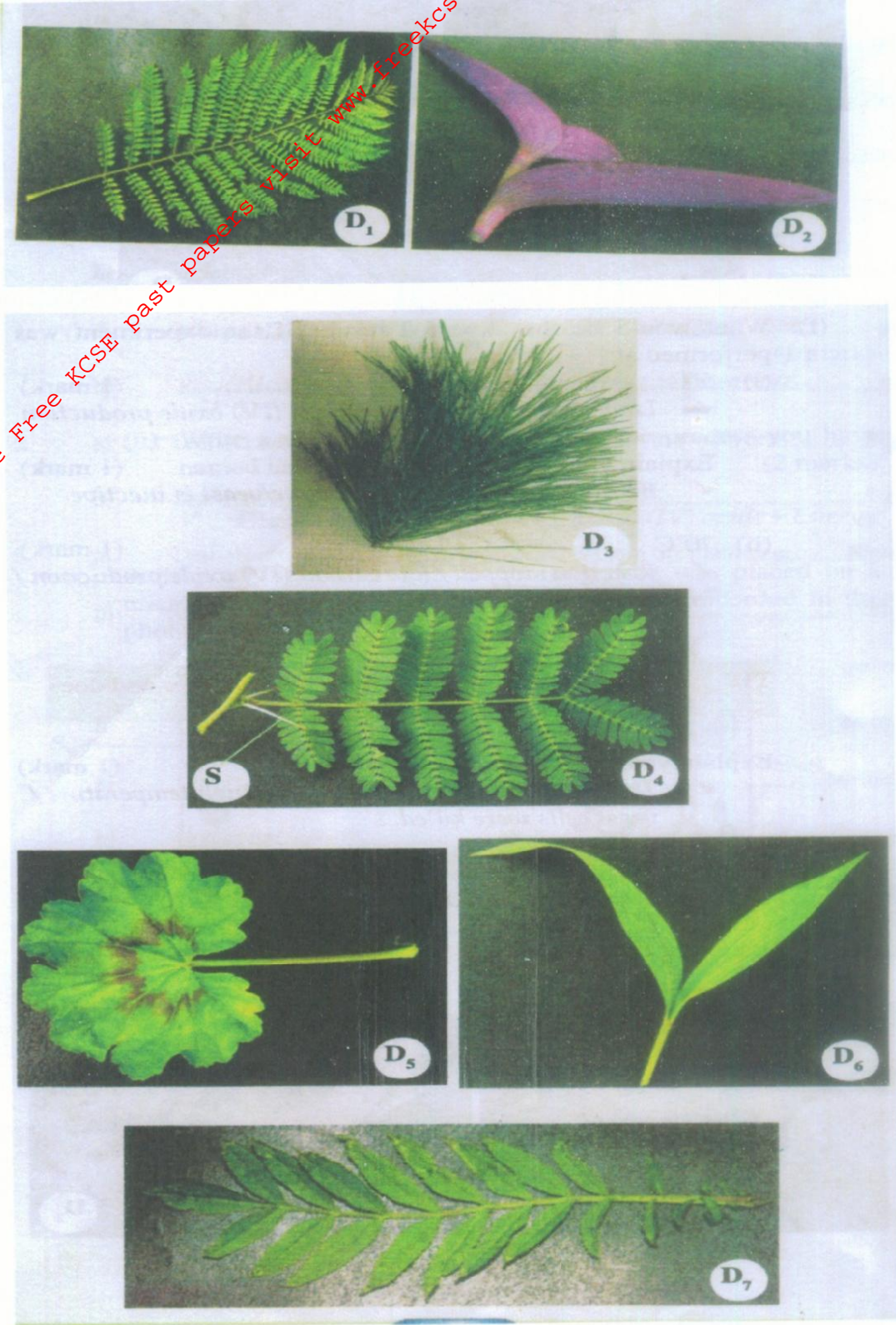
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c) State **three** differences between specimens M and N. {3mks}

M	N
i)	
ii)	
iii)	

d) On the photograph labeled M, name any **three** parts. {3mks}

3. You are provided with seven, photographs of plants specimen. They are labelled specimen D₁, D₂, D₃, D₄, D₅, D₆ and D₇



Key.

1. a) Leaves needle like go to 2
- b) Leaves broad go to 3
2. a) Leaves arranged in clusters on stem..... Pinnacea
- b) Leaves not arranged in clusters on stem Araucariaceae
3. a) Leaves compound..... go to 4
- b) Leaves simple..... go to 7
4. a) Leaflets pointed at the end go to 5
- b) Leaflets rounded at the end..... go to 6
5. a) Leaflets attached to many small stalks that join the main one Mimosaceae
- b) Leaflets attached to one stalk Rosaceae
6. a) Leaflets attached to many small stalks that join the main one..... Bignonaceae
- b) Leaflets attached to one stalk Compositae
7. a) Leaves green go to 8
- b) Leaves purple go to 9
8. a) Leaves parallel veined Graminae
- b) Leaves net veined Geranaceae
9. a) Leaves parallel veined Commelinaceae
- b) Leaves net veined Euphorbiaceae

- a) Use the dichotomous key to identify the taxonomic group specimens D₁, D₃ and D₅ photographs provided. _____ {6mks}

Specimen	Steps followed	Identity
D ₁		
D ₃		
D ₆		

- b) (i) Suggest the likely natural habitat for specimen D₄. {1mk}

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(ii) Explain one observable feature that adapts specimens D₄ to the habitat you have mentioned in (b) (i) above. {2mks}

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(iii) What is the importance of the structure marked S in specimen D₄? {1mk}

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c) (i) If the stem of specimen D₂ was squeezed strongly, state the expected observations. {1mk}

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(ii) From your observation in c (i) above, suggest how specimen D₂ is adapted to its habitat. {1mk}

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