

NAME..... INDEX NO.....  
SCHOOL..... CANDIDATE'S SIGNATURE.....  
DATE.....

231/3  
BIOLOGY  
PAPER 3  
(PRACTICAL)  
JULY/AUGUST 2014  
TIME: 1¾ HOURS

**TRANS-NZOIA COUNTY JOINT EXAMINATIONS-2014**  
*Kenya Certificate of Secondary Education*

**BIOLOGY**  
**PAPER 3**  
**(PRACTICAL)**  
**TIME: 1¾ HOURS**

**INSTRUCTIONS TO CANDIDATES:**

- (a) Write your name and index number in the spaces provided above.
- (b) Sign and write the date of examination in the spaces provided above.
- (c) Answer all the questions in the spaces provided.
- (d) You are required to spend the first 15 minutes of the 1¾ hours allowed for this paper reading the whole paper carefully before commencing your work.
- (e) Additional papers must not be inserted.
- (f) This paper has three questions and pages.
- (g) Students should check the question paper to ascertain that all the paper are printed as indicated and that no questions are missing.

**FOR EXAMINER'S USE ONLY:**

| Question           | Maximum Score | Candidate's Score |
|--------------------|---------------|-------------------|
| 1                  | 15            |                   |
| 2                  | 15            |                   |
| 3                  | 10            |                   |
| <b>Total score</b> | <b>40</b>     |                   |

1. (a) You are provided with suspension W. Using the reagents provided carry food test and record the procedure, observation and conclusion.

| Food substance | Procedure | Observations | Conclusion |
|----------------|-----------|--------------|------------|
|                |           |              |            |
|                |           |              |            |
|                |           |              |            |

(12 marks)

- (b) Mention **two** enzymes that may be required to digest the content of suspension W in the alimentary canal of mammal. (2 marks)

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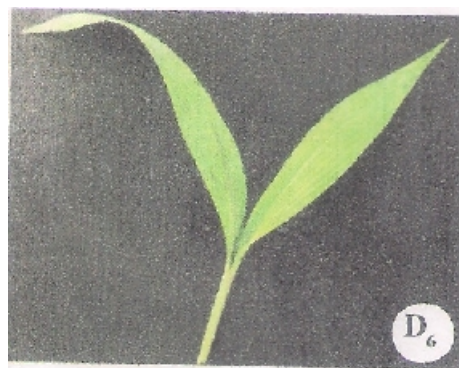
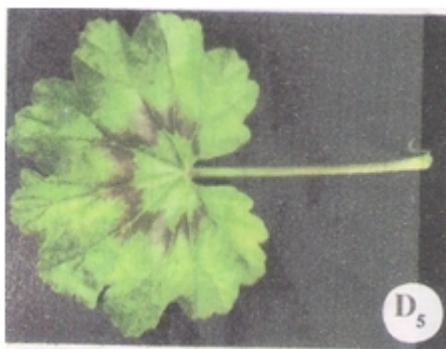
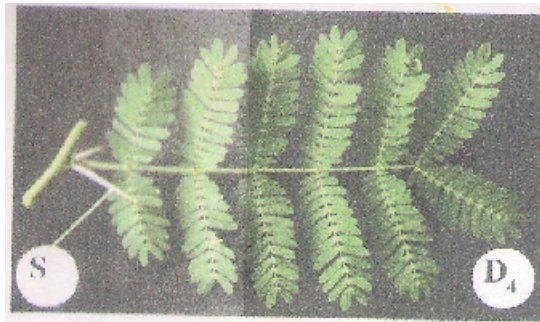
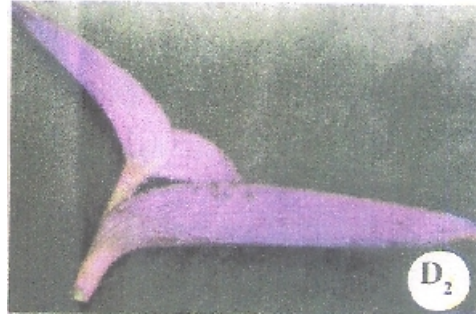
- (c) State the purpose of hydrochloric acid in the experiment. (1 mark)

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2. You are provided with seven photographs of plant specimens. They are labelled specimen D<sub>1</sub>, D<sub>2</sub>, D<sub>3</sub>, D<sub>4</sub>, D<sub>5</sub>, D<sub>6</sub>, D<sub>7</sub>.



- (a) Use the dichotomous key to identify the taxonomic group of each of the seven specimens in the photographs provided.

**The dichotomous key**

1. (a) Leaves needle like ----- go to 2  
 (b) Leaves broad ----- go to 3
2. (a) Leaves arranged in clusters on stem ----- Pinaceae  
 (b) Leaves not arranged in clusters on stem ----- Araucariaceae
3. (a) Leaves compound ----- go to 4  
 (b) Leaves simple ----- go to 7
4. (a) Leaf pinnate ----- go to 5  
 (b) Leaf bipinnate ----- 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

| Specimen       | Steps followed | Identify |
|----------------|----------------|----------|
| D <sub>1</sub> |                |          |
| D <sub>2</sub> |                |          |
| D <sub>3</sub> |                |          |
| D <sub>4</sub> |                |          |
| D <sub>5</sub> |                |          |
| D <sub>6</sub> |                |          |
| D <sub>7</sub> |                |          |

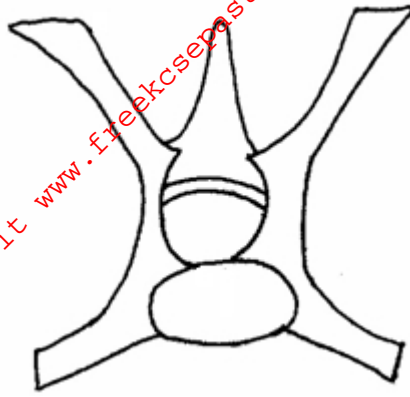
(14 marks)

- (b) Suggest the possible habitat that specimen D<sub>4</sub> is adapted to.

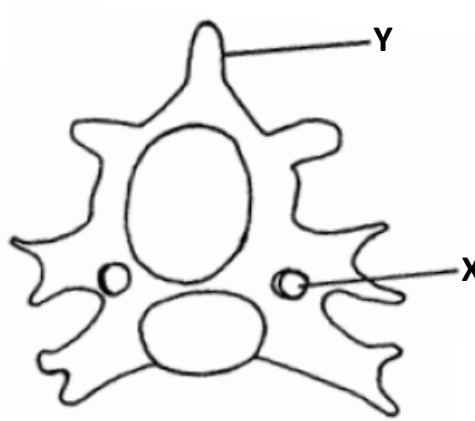
(1 mark)

3. The diagram **below** represents bones obtained from a mammal.

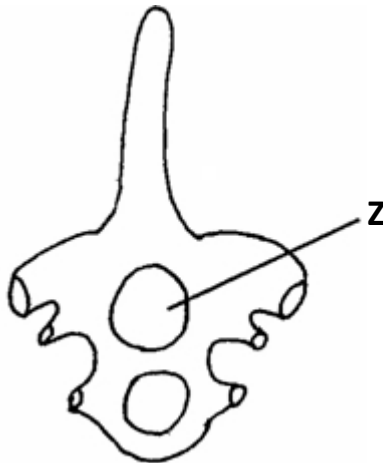
A<sub>1</sub>



A<sub>2</sub>



A<sub>3</sub>



(a) Identity bones.

(3 marks)

A<sub>1</sub> \_\_\_\_\_

A<sub>2</sub> \_\_\_\_\_

A<sub>3</sub> \_\_\_\_\_

(b) Name parts labelled. (3 marks)

**X** \_\_\_\_\_

**Y** \_\_\_\_\_

**Z** \_\_\_\_\_

(c) From which region of the body was bone labelled A<sub>2</sub> obtained. (1 mark)

\_\_\_\_\_

(d) State the function of part labelled **X**. (1 mark)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(e) State **two** adaptations of bone labelled A<sub>1</sub> to its function. (2 marks)

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