

Name:..... Adm No.

School: Stream :

231/3

BIOLOGY

PAPER 3 (practical)

OCTOBER 2022

TIME: 1 HOUR 45 MINS

NYAHOKAKIRA CLUSTER THREE EXAMINATIONS 2022

Kenya Certificate of Secondary Education (KCSE)



INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the spaces provided above
2. Sign and write date of examination in the space provided.
3. Answer ALL the questions in the spaces provided.
4. 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.
5. Additional papers must not be inserted.
6. Candidates may be penalized for recording irrelevant information and for incorrect spelling of technical terms.
7. Candidates should answer all the questions in English

For examiners use only

Question	Maximum score	Candidate's score
1	12	
2	14	
3	14	
Total score	40	

1. (a) you are provided with specimen E. Remove the endosperm and crush using a motor and pestle. Add distilled water and obtain a solution. Decant the mixture to obtain solution E1. Using the reagents provided, test the food present in solution E1. **(3mks)**

Food	Procedure	Observation	Conclusion

(i) account for your observation in (a) above

(2mks)

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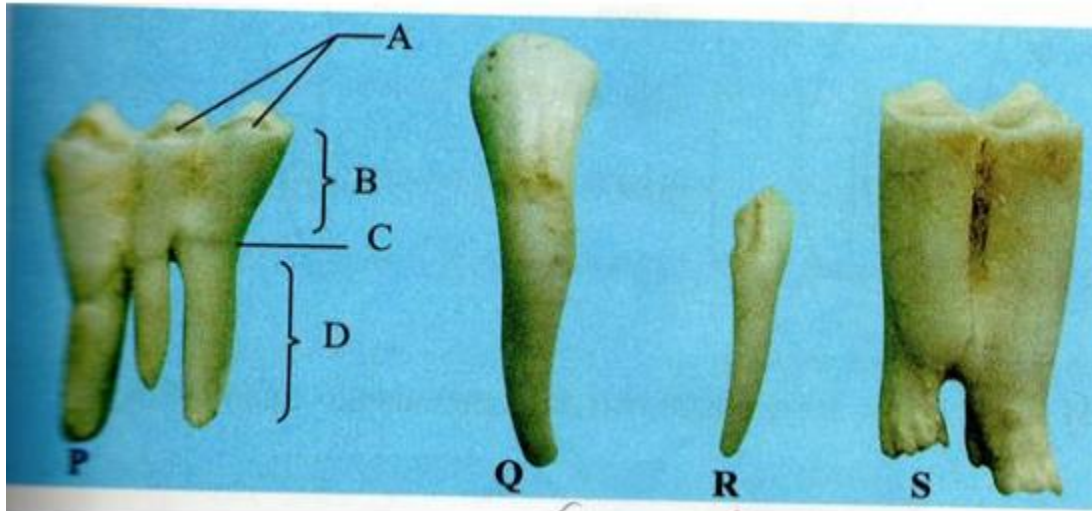
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(b) The photography below shows four specimens labelled P, Q R and S which were obtained from the same animal. Examine them.



(i) With reasons, identify P and Q (4mks)

P:

Reason:

Q:

Reason:

(ii) In specimen P, name the part labelled B (1mk)

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(iii) Explain how specimen S is adapted or its functions. (1mk)

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- (iv) Using the observable features only, state the similarity between specimen Q and R.
(1mk)

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2. You are provided with three specimens labelled F and mounting pin. Using the measuring cylinder provided, measure 20cm^3 of water and put in a boiling tube. Measure the temperature of water as initial temperature.

- (a) Mount one of the specimen E on the pin and ignite using a burner flame. Place it under the boiling tube containing 20cm^3 of water and let it burn all and turn to ash. Measure the new temperature of water. Repeat the experiment twice and note the readings and record in the table below.

(2mks)

Setup	Initial temperature	Final temperature
1 st		
2 nd		
3 rd		

- (b) Calculate the average change in temperature.

(1mk)

- (i) If 1cm^3 of water requires 4.2joules of energy to change through one degree.
Calculate the amount of energy produced by each piece of specimen E. (2mks)

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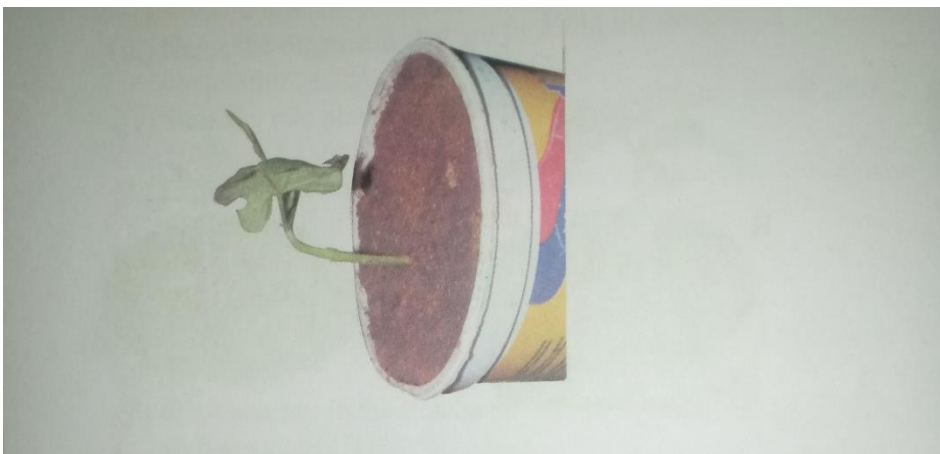
- (ii) If an average teenager requires 10,400Kj per day, how many pieces of specimen E does one require for the daily energy requirements. (2mks)

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- (iii) Name one possible sources of error in the above experiment. (1mk)

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- (c) Below is a photograph of a certain phenomenon study it carefully and use it to answer the questions that follow



(i) Name the response exhibited by the photograph (1mark)

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(ii) Explain how the response occurs (3marks)

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(iii) If a plant was placed in a clinostat, making four rotations an hour at the same orientation. State the observations made after several days (2marks)

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3. You are provided with specimen J. Examine it and answer the questions below.

(a) i) Identify the subdivision of the plant from which J was obtained. (1mk)

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ii) Give a reason. (1mk)

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(b) State the class of J. (1mk)

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Reason. (1mk)

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(c) Name the symmetry of the flower (1mark)

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(d)

(i) Suggest the mode of pollination of specimen J (1mark)

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(ii) Give two reasons of your answer in (a) above (2marks)

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(iii) Extract the pistil from specimen J using your hand and observe it with hand lens draw a well labelled diagram (4marks)

(iv) Describe the floral parts of specimen J
(2mks)

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