

Resource Mock examinations

June 2016

Biology Practical

P530/3

3 Hours

Instructions to candidates:

- Attempt all questions in this test paper
- All answers must be written in the spaces provided
- Neat work is recommended

For Examiners use only

Question	Marks
1	
2	
3	
Total	

Qn.1 (36 marks, 60 minutes)

You are provided with a freshly killed specimen labeled T.

a) Dissect the specimen to release the skin from the body wall on the ventral side;

i) Describe the attachment of the skin on the body wall
(3marks)

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- ii) Relate the attachment of the skin in a(i) above to the survival of the specimen in its habitat (3 ½ marks)

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- iii) Observe the inner surface of the skin and relate its structure to its suitability as an organ of respiration (3 marks)

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- b) Dissect the specimen to display the abdominal trunk organs. Displace the alimentary canal to the left. Without displacing any other organ, draw and label fully. (26 marks)

Qn. 2 (37 marks, 80 minutes)

You are provided with specimen P and solution X.

- a) Obtain a cube measuring 1x1x1cm from specimen P. Crush it to obtain an extract. Carry out tests in table 1 below on both the extract and solution X. Record your tests, observations and conclusions.

Table 1

(12 ½ marks)

Test	Observations		Conclusions
Starch Test	P		
	X		
Reducing Sugar Test	P		
	X		

b) Obtain 4 test tubes labeled 1-4. To all add 3cm³ of X. Now obtain 4 cubes from specimen P of dimensions 1x1x1cm and treat them as follows.

Cube 1: Boil for 1 minute in water, remove and cool

Cube 2: Cut into 2 pieces

Cube 3: Cut into 4 pieces

Cube 4: Leave intact

Transfer the cubes into the corresponding test tubes 1-4. Leave for one hour as you continue with other tasks. After this time, crush the cubes/the pieces to obtain extracts 1-4. Carry out a reducing sugar test on extracts and record your observations in the table 2 below (12 marks)

Table 2

Test tube	Observations
1	
2	
3	
4	

c) What process is being investigated in this experiment? (1 mark)

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d) Give precise explanations for the observations made in tests tubes 1-4 as informed by the process stated in c(i) above. (9 marks)

i) Test tube 1

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ii) Test tube 2

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iii) Test tube 3

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iv) Test tube 4

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Qn. 3 (27 marks, 40 minutes)

You are provided with specimens A, B, C, D and E. Make biological examination of the specimens using a hand lens and answer the following questions

a) Identify the specimens and place them into one major group. (1 mark)

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What diagnostic features have you used to give the specimens the identity in (a) above? (3 marks)

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b) Complete the following table by giving the salient description of the structures indicated in table 3 below (12 ½ marks)

Table 3

Specimen	Abdomen	Wings	Tarsal region
A			
B			
C			
D			
E			

c) Using structural features of the wings, construct a dichotomous key to identify the specimens (5 marks)

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d) Observe the tarsal region of specimen B under low power of the microscope:

i) Make a large a large labeled drawing. (2 ½ marks)

- ii) Relate the structure of the tarsal region to the survival of the specimen in its habitat. (3 marks)

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END

Instructions to the teacher responsible for setting up the practical

Provide each candidate with the following:

Freshly killed toad labeled T

10 mls of solution X (Made by dissolving 180g of glucose to make 1litre of solution)

A large sized Irish potato labeled P

6 test tubes

A pestle and a mortar

Fleshly killed specimens

House fly labeled A

Worker bee labeled B

Worker termite labeled C

Butterfly labeled D

Cockroach labeled E

A microscope (Objective lens X4 or X5)

A hand lens

Access to heat source and reagents for food test