Name:.....Centre/Index No:...../.....

P530/3
BIOLOGY
PRACTICAL
Paper 3
AUGUST, 2024
3¼ hours

JINJA JOINT EXAMINATIONS BOARD

Uganda Advanced Certificate of Education

MOCK EXAMINATIONS – AUGUST, 2024

BIOLOGY

PRACTICAL

Paper 3

$3\frac{1}{4}$ hours

INSTRUCTIONS TO CANDIDATES

Answer **ALL** *questions.*

Answers must be written in the spaces provided.
Additional papers must not be inserted

For Examiner's Use Only

QUESTION	MARKS
1	
2	
3	
TOTAL	

1. You are provided with specimen K which is freshly killed. Study it.

(a) With reference to the location of the structures that cover the body, give the importance of each of a named structure to the animal. (3 marks)

.....

.....

.....

.....

.....

.....

.....

(b) Open the mouth wide and examine the roof of the buccal cavity. Explain how each structure is adapted to its function. (3 marks)

.....

.....

.....

.....

.....

.....

.....

(c) Dissect to open abdomen, thorax and the neck to

(i) display the main blood vessels with the heart displayed to the right within thoracic cavity and the base of neck.

(ii) expose the structures that channel materials and fluids in and out through the thorax.

Make a labelled drawing of your dissection in (i) and (ii) above. (23 marks)

(d) Examine the respiratory tract. How is it adapted to its function? (2 marks)

.....

.....

.....

.....

.....

(e) Cut out the stomach and open it longitudinally and discard the inside contents. Examine its structure.

(i) State two differences between the cardiac region and plycloric region. (2 marks)

Cardiac region	Phyloric region

(ii) Explain the role of the differences in e (i) above to the functioning of the stomach. (3 marks)

.....

.....

.....

.....

.....

.....

.....

2. You are provided with solution P, Q and R which are common laboratory reagents, plant seed cotyledons at different germination stages labeled V_1 and V_2.

Using a knife, cut two cotyledons of V_1 and V_2 separately into small pieces. With aid of a dropper, use small volume of water to put the pieces into test tubes labeled V1 and V_2 respectively. Wash the cut out stomach obtained from question 1 specimen, using a knife divide it into cardiac region and pyloric region and continue to cut each region into small pieces. Obtain pieces equivalent to those of cotyledons and put cardiac region pieces to test tube labelled W_1 and pyloric region pieces to test tube labelled W_2.

(a) Carry out the following tests on each of the contents in test tubes and after one minute record your comparative observations and deductions in table I below.

(8 marks)

Table I

Test	Test Tube	Observation	Deduction
To contents of test tube add 2 cm^3 of solution P	V_1		
	V_2		
	W_1		
	W_2		

(b) Further cut into small pieces four cotyledons of V_2. Divide into two equal portions and place each into test tubes labelled 1 and 2 with aid of small volume of water.

Carry out tests indicated in Table 2.

Record your observations and deductions

Table 2 (4 marks)

Test	Test Tube	Observation	Deduction
To contents of test tube, add 1 cm^3 of solution Q followed by 2cm^3 of solution P	1		
To contents of test tube, add 1 cm^3 solution R followed by 2cm^3 of solution P	2		

(c) Explain your results in table 1 between

(i) V_1 and V_2 (4 marks)

.....

.....

.....

.....

.....

.....

.....

(ii) W_1 and W_2 (3 marks)

.....

.....

.....

.....

.....

.....

.....

(d) Explain your results in Table 2. (3 marks)

.....

.....

.....

.....

.....

.....

.....

(e) Based on your results in Table I, suggest one possible conclusion given the nature of tissues. (1 mark)

.....

.....

.....

.....

(f) (i) Carry out the following tests to establish the nutrient concentration on solution X provided. Record your tests and observations in Table 3.

Table 3 (6 marks)

Test	Observation
Iodine test	
Buiret test	

(ii) Put into a mortor pieces of remaining stomach, grind into a fine paste using pestle and add 5cm^3 of distilled water, stir, leave to stand and decant to obtain extract, label it Z. Label two test tubes (i) and (ii). Put 2 cm^3 of solution X in each of the test tube, add 2cm^3 of extract Z into each of the test tube. Further add 2cm^3 of solution Q into test tube (i) and 2cm^3 of solution R into test tube (ii). Incubate the test tubes (i) and (ii) at 35 – 40oc for 30 minutes shaking periodically. After 30 minutes, carry out Iodine test and Biuret test on the test tubes contents, record your observations and deductions on table 4.

Table 4

(6 marks)

Test	Test Tube	Observations	Deductions
Iodine test	(i)		
	(ii)		
Biuret test	(i)		
	(ii)		

(iii) Explain your results in Table 3 and Table 4. (3 marks)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

3. You are provided with specimen labelled A, B and C and solution H.

(a) Obtain single units of specimen A and B, and place each in a microscope slides observe under medium power of microscope. Compare specimen A and B. (4 marks)

.....

.....

.....

.....

.....

.....

(b) Place units of specimen A in solution H in petridish, leave to stand for five minutes. After time duration, place a single unit on slide and observe under medium power of microscope.

Explain your observations on the state of cells. (4 marks)

.....

.....

.....

.....

.....

.....

.....

(c) With reason, suggest type of reproduction in specimen A. (2 marks)

.....

.....

.....

(d) Dust heads of specimen B into a microscope slide and observe under medium power of microscope. State the adaptation to reproduction. (2 marks)

.....

.....

.....

.....

.....

(e) As observed under microscope, draw and label two adjacent functional units of specimen B (5 marks)

(f) (i) Examine specimen C. With reasons, classify it into class taxonomic group

Class..... (1 mark)

Reasons.....(2 marks)

.....

.....

(ii) Obtain this strips from the upper and lower epidermis of one leaf of specimen C and place each on one microscope slide and cover with cover slip with aid of water. Observe under medium power of microscope. State differences between them. (2 marks)

Upper epidermis	Lower epidermis

(iii) Based on the differences, state the habitat of specimen C (1 mark)

.....

(iv) State the significance of differences stated in (f) (ii) above. (3 marks)

.....

.....

.....

.....

 End