NAME ……INDEX No……

P530/3

BIOLOGY PRACTICAL

TIME: 3Hrs 15 Min

MOCK EXAMINATION-2024

S.6 BIOLOGY PAPER 3

***INSTRUCTIONS*:**

- *Attempt all questions in this paper*
- *Untidy work will lead to loss of marks*

FOR EXAMINER'S USE	
QUESTION	**SCORE**
1.	
2.	
3.	
TOTAL SCORE	

1. You are provided with specimen Q which is a freshly killed animal.
   a) Giving reasons, classify specimen Q into its order. (04 marks)
   Order: ……
   Reasons
   ……
   ……
   ……
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   ……

   b)
   (i) Examine the outer wings of the specimen. Describe the structure and orientation of the outer wings. (04 marks)
   Structure
   ……
   ……

   Orientation
   ……
   ……

   (ii) Give the significance of the structure and orientation given in b(i) above. (02 marks)
   ……
   ……
   ……

   c) Dissect along the right lateral line of the thorax and abdomen, deflect the tergum to the left of the specimen and pin it.
   (i) Carefully remove the gut of the specimen, pin it down end to end and measure and record the length of different parts as shown in table 1. (04 marks)

Table 1

Part	Crop	Gizzard	Midgut	Rest of gut
Length(mm)				

(ii) What is the significance of your results? (07 marks)

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d)

i) Make a transverse section of the gizzard and transfer it onto a microscope slide Observe under low power of a microscope. Draw and label. (06 marks)

ii) From your drawing in d) i) above, state three adaptations of the gizzard to its functions. (03 marks)

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e) Draw and label the structures on the ventral cuticle and the structures on the terga of thorax. (10 marks)

2. You are provided with nutrient suspension T, extracts Y and Z, solutions W and X which are common laboratory reagents.
   (a) Carry out food tests on solution T to establish its nutrient contents. Record your tests, observations and deductions and inducted in table 2 below.

Table 2

Tests	Observations	Deductions
Iodine test		
Benedict's test		
Biuret test		

(b) Label test tubes 1, 2, 3 and 4. Add into each test tube $1cm^3$ of suspension T, further add contents into each test tube by following instructions below.
Test tube 1: $2cm^3$ of solution Y and $1cm^3$ of solution W.
Test tube 2: 2 cm^3 of solution Y and $1cm^3$ of solution X.
Test tube 3: 2 cm^3 of solution Z and $1cm^3$ of solution W.
Test tube 4: 2 cm^3 of solution Z and $1cm^3$ of solution X.
Incubate the test tubes at 35°C- 40°C for 40 minutes (meanwhile proceed with other work for the mean time).

(c)

(i) After one hour, observe test tubes 1 to 4 and record your observations and deductions in table 3. (06 marks)

Table 3

Test tube	Observations	Deductions
1		
2		
3		
4		

(ii) Explain your results in Table 3. (05 marks)

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(d)

(i) Add $1cm^3$ of solution W into test tube where solution X was added. Thereafter, carry out tests indicated in table 4 on contents of the test tubes. Record your observations and deductions. (07 marks)

Table 4

Tests	**Test tube**	**Observations**	**Deductions**
Iodine test	3		
	4		
Benedict's test	3		
	4		

(ii) Explain the difference in your results in the tables 4. (05 marks)

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3. You are provided with specimen **H**, **I**, **J**, **K** and **L** which are plant specimens. Cut specimen **I** and **L** transversely and cut **K** longitudinally.

(a) State the mode of dispersal of the specimen I and give three adaptations. (04 marks)

Mode: ……

Adaptations

……

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(b) With the help of hand lens, examine and state three differences between seeds of specimen I and K. (03 marks)

Specimen I	**Specimen K**

(c)

(i) Open specimen J longitudinally. By using a hand lens, observe and state the two descriptive features of the placenta of each specimen in table 5.

(ii) Examine the pericarp of each specimen and state two observations in table 5.

(10 marks)

Table 5

Specimen	Descriptive features	
	Placenta	Pericarp
H		
I		
J		
K		
L		

(d)

(i) Using the descriptive features in table 5, construct a dichotomous key to identify the specimens. (06 marks)

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(ii) Explain the reproductive advantage specimen K has over specimen I. (04 marks)

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(e) Observe the cut surface of specimen L. By excluding structures that are exterior to locules, draw and label half of it. (05 marks)

END