P530/3
BIOLOGY
PRACTICAL
Paper 3
03rd Aug 2022
3 Hours

Name : ……..……

Signature : …… Personal No : ……..

KAMPALA WAKISO GIANT SCHOOLS' ASSOCIATION (KWGSA)

National Joint Mock Examination 2022

Uganda Advanced Certificate of Education

BIOLOGY PRACTICAL

Paper 3

3 Hours

INSTRUCTIONS TO CANDIDATES

This paper consists of **three** *questions*

Answer **all** *questions*

Answers to this **must** *be written in the spaces provided*

For Examiners' Use only	
Question	**Score**
1	
2	
3	

1. You are provided with specimens **P** and **Q** which are freshly killed animals. Examine the external features of the specimens.

a) State the phyllum of each specimen and state two reasons for the class of each

(i) Phyllum of **P**.

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Reason

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(ii) Phyllum of **Q**

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Reason

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b) Examine the ventral side of the right fore limb and right hand limb of **Q**

(i) State **two** differences between the two feet. (02 marks)

Fore limb	**Hind Limb**

(ii) State **two** ways in which each of the limbs is adapted to its function

Fore limb (02 marks)

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Hind limb (02 marks)

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(iii) Describe the attachment of the fore limb and hind limb of specimen **Q** and give the significance in each case

Fore limb (01 mark)

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Significance (01 mark)

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Hind limb (01 mark)

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Significance (01 mark)

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(d) Describe the shape of the head of specimen **Q** and give the significance.

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(e) Carefully examine the features on the dorsal sides of the head and thorax of specimen **Q**. Describe them and give their significance in the survival of **Q**.

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(f) Disect the specimen **P** to display structures responsible for locomotion plus those used for transport of materials in the body of the specimen anterior to the 5th abdominal segment. Draw and label with dorsal cuticle displaced to the left of the specimen. (20 marks)

2. You are provided with solutions **A_1, A_2** and **A_3** which contain food nutrients. Extracts **K** and **L** contain living ingredients. You are required to investigate the effects of **K** and **L** on the solutions **A_1** and **A_2**.

a) Using the reagents provided, carry out iodine test, buirets test and DCPIP test on the solutions **A_1, A_2** and **A_3**. Record your tests, observations and deductions in the table below. (06 marks)

Table 1

	Test **Iodine Test**	**Observation (s)**	**Deduction(s)**
A_1			

A_2			
A_3			

Table II

	Test **Buiret's Test**	**Observation (s)**	**Deduction(s)**
A_1			
A_2			
A_3			

Table III

	Test **DCPIP Test**	**Observation (s)**	**Deduction(s)**
A_1			

A_2			
A_3			

b) Suggest the significance of carrying out the above tests.

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(c) Label six test tubes **T_1, T_2, T_3, P_1, P_2** and **P_3.** Prepare a water bath and maintain it between 35-40^{0}C.

Add 2cm^3 of solution **A** in each of the test tubes and further add contents as instructed.

To **T_1**, add 1cm^3 of **K** plus 1cm^3 of water.

To **T_2**, add 2cm^3 of sodium hydroxide solution and then 1cm^3 of **K**.

To **T_3**, add 2cm^3 of dilute hydrochloric acid solution and then 1cm^3 of **K**.

Carry out procedures above using solution **A_2** instead of **A_1** and incubate all test tubes and their contents for 40 minutes. After this time, obtain about 2cm^3 of each mixture and carry out the following tests. Record your observations and deductions in the tables below. (06 marks)

Table IV : Buiret's Test

	Observation (s)	**Deduction(s)**
T_1		
T_2		

T_3		

Table V : Iodine test (06 marks)

	Observation (s)	**Deduction(s)**
P_1		
P_2		
P_3		

(iii) Explain the results in table IV and V. (04 marks)

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3. You are provided with specimens **P, Q, R, S** and **T** which are plant leaves.

a) Describe the specimens basing on observable features of the specimens **P** (02 marks)

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Q (02 marks)

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R (02 marks)

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S (02 marks)

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T (02 marks)

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b) Use the above features to construct a biological dichotomous key to identify the specimen **P, Q, R, S** and **T**. (04 marks)

(c) Using observable features, state the importance of specimen **T** to a plant where it was obtained. (06 marks)

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END