NAME……CLASS…….…… INDEX No……..

Candidates signature……Date ……..

231/3

Biology Paper 3
Practical
Time: $1\frac{3}{4}$ Hours

SUKELLEMMO JOINT PREMOCK 2022

Instructions to Candidates

- Answer ALL the three questions in the spaces provided.
- Spend the first 15 minutes of the 1 hour & 45 minutes to read through the paper carefully before commencing your work.
- One may be penalized for recording irrelevant information and for incorrect spelling, particularly of *technical* terms.
- **Additional pages must not be inserted.**

For Examiner's Use Only

QUESTION	Maximum Score	Candidate's Score
1	18	
2	12	
3	10	
	40	

- **This paper consists of 5 printed pages.**
- **Candidates should check the question paper to ensure that all the pages are printed as indicated and no question is missing.**

1. You are provided with a piece of Irish potato tuber, sodium hydroxide solution, a scalpel, a test tube, hydrochloric acid, iodine solution, hydrogen peroxide and a measuring cylinder.

(a) Using the scalpel provided, peel the potato and cut five equal cubes each 1cm^3. Label them C1, C2, C3, C4 and C5.

(i) Cut C1 into many tiny pieces and put them into a test tube. Add 2ml of iodine solution. Observe and record your observations. (1 mark)

Observations.....

(ii) Allow the set-up to stand for 30 minutes. Observe and record your observations. (1 mark)

Observations.....

(iii) Account for your observations in (i) and (ii) above. (2 marks)

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(b) (i) Put 5ml of hydrogen peroxide solution into the measuring cylinder provided. Put cube C2 into the measuring cylinder and record the volume of foam produced after two minutes.

Volume ..... cm^3 (1 mark)

(ii) Empty the measuring cylinder and clean it. Cut C3 into smaller pieces and put them into a fresh 5ml hydrogen peroxide solution in the measuring cylinder. Record the volume of foam produced after two minutes. (1 mark)

Volume cm3

(iii) Account for the difference in volume of foam produced by cube C3 and cube C2 above.

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..... (4 marks)

(c) (i) Put 5ml hydrogen peroxide solution into a clean measuring cylinder. Add 1ml of the hydrochloric acid provided into the measuring cylinder and place cube C4 inside.

Record your observations after two minutes. (1 mark)

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(ii) Empty the measuring cylinder and clean it. Put 5ml hydrogen peroxide solution into the measuring cylinder and add 1ml of sodium hydroxide solution provided. Place cube C5 inside and record your observations after two minutes. (1mark)

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(iii)Account for the difference in observations made in (c)(i) and (ii) above. (4 marks)

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(d) Explain the importance of the enzyme responsible for the observations above in the tissues of living organisms. (2 marks)

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2. You are provided with specimens **H** and **K**. Observe the specimens keenly.

(a) State two functions of specimen **K**. (2 marks)

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(b) Name the division and class to which specimen **H** belongs.

Division…… (1 mark)

Reason (1 mark)

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Class …… (1 mark)

Reasons (2 marks)

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(c) State **three** adaptations of specimen **K** for maximum photosynthesis. (3marks)

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(d) Explain **two** ways in which specimen **H** is adapted for survival in its habitat. (2 marks)

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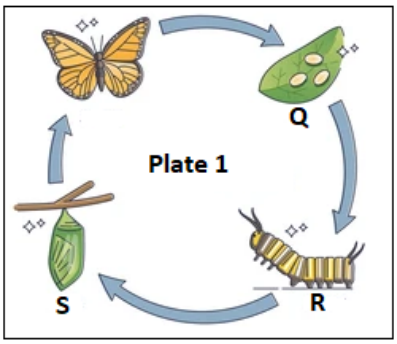
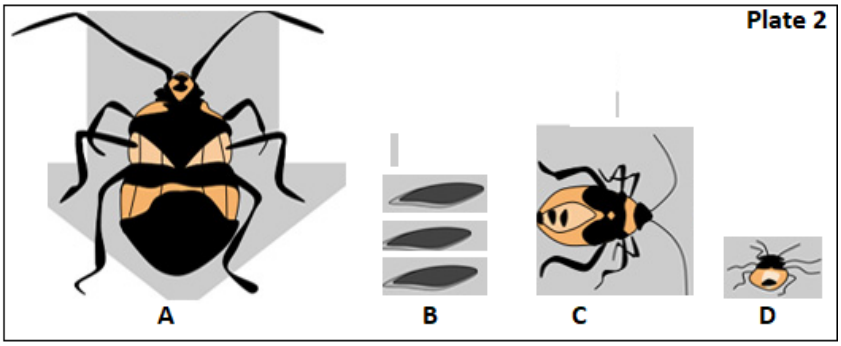
3. Study the photographs below representing certain processes in insects. Use them to answer the questions that follow.





(a) With reasons, name the type of the process represented by plates 1 and 2. (2 marks)

Plate	Name	Reason
1		
2		

(b) Name stages Q, R and D. (3 marks)

Q …….

R ……

D ……..

(c) Give an advantage of the process in plate 1 over the process in plate 2. (1 mark)

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(d) Arrange stages A, B, C and D in their correct sequence. (1 mark)

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(e) State **two** differences in the biological activities between the developmental sages R and S. (2 marks)

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(f) Insects are the most populous and widespread in phylum Arthropoda. Give a reason to explain this observation. (1 mark)

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