

1. You are provided with specimen D which is a plant organ. Cut the specimen transversely.

Crush half of the specimen D in a mortar using a pestle. Add 10cm^3 of water to the crushed portion and decant.

- (a) Carry out tests on the extract using the reagents provided and record your observations and deductions in the table 1 below *(10marks)*

Procedure	Observation	Deduction
(i) To 1cm^3 of extract D in a test tube, add 3 drops of iodine solution		
(ii) To 1cm^3 of extract D in a test tube, add 1cm^3 of Benedict's solution and boil		
(iii) To 1cm^3 of extract D in a test tube, add 1cm^3 of sodium hydroxide solution, followed by 3 drops of copper (II) sulphate solution		
(iv) To 1cm^3 of DCPIP, add extract D drop by drop		

(b) What are the likely benefits to a person of eating specimen D (2marks)

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(c) From the remaining half of specimen D, cut out a cube measuring 1 cm x 1 cm x 1 cm.

Divide the cube into two equal parts. Label two test tubes 1 and 2. Add 3cm³ of water into test tube 1 and 3cm³ of H into test tube 2.

(i) Record your observations and deductions in the table 2 below;

(4marks)

Test tube	Observation	Deduction
(i) Test tube 1 3cm ³ of water and half of cube of specimen D		
(ii) Test tube 2 3cm ³ of solution H and half of cube of specimen D		

(d)(i) Giving a reason, state the identity of the active substance in specimen D (3marks)

Identity

Reason.....

i) What would be the effect of boiling the cube from specimen D on the activity of its active substance?

Explain your answer. (2marks)

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2. You are provided with specimens M, N and O which are flowers. Examine the specimens and answer the following questions.

(a) Describe the essential parts of the specimen M and specimen N

(i) Specimen M (3marks)

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(ii) Specimen N (2marks)

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(b)(i) Describe how specimen O is adapted for pollination (3marks)

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(iii) State the type of pollination which is most likely to occur in specimen O. Give a reason for your answer. (2marks)

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