1. You are provided with the following materials and apparatus.

- Specimen **E**
- Hydrogen peroxide
- A beaker
- A scalpel
- 2 test tubes, labelled **A** and **B**
- A dropper
- Source of heat
- White tile
- Wooden splint

Procedure

(i) Peel a portion of specimen **E** using the scalpel and cut out two equal portions of about 1 cm^3 each.

(ii) Macerate/cut into smaller pieces one portion on a white tile and place the pieces in the test tube labelled **A**.

(iii) Boil the other portion in a beaker, macerate on a white tile and transfer it into the test tube labelled **B**.

(iv) To each test tube, add 3 drops of hydrogen peroxide and record the observations.

(a)

Test tube	Observations	Conclusion
A	....	....
B	....	....

(b) State the aim of the experiment.

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(c) Give the reason for macerating specimen **E** before adding hydrogen peroxide. (2 marks)

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(d) (i) Name the organ in the human body where the reaction in test tube **A** occurs. (1 mark)

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(ii) State the significance of the reaction to the human body. (1 mark)

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(e) Suggest **two** other factors that are likely to affect the rate of reaction in test tube **A**. (2 marks)

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2. You are provided with the following materials and photographs.

- Specimen H
- Specimen J
- Hand lens

		
K	L	M

(a) Complete the following table by classifying the specimens H, J and M based on observable features only.

Specimen	Class	Reasons
H	.....	.....
J	.....	.....
Photograph M	.....	.....

(9 marks)

(b) Explain the ecological significance of the Kingdom to which specimen H belongs.

(2 marks)

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(c) Make a labelled diagram of the dorsal view of the abdomen of specimen J. (2 mark

(d) Construct a food chain with four trophic levels involving the specimens provided and those presented in the photographs. (

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3. You are provided with the following materials.

- Specimen N
- Specimen P
- Microscope slide
- Light microscope
- Cover slip
- Boiling water
- Wooden Splint

(a) Other than the leaf margin, state one observable difference between specim P.

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(b) Explain the observable adaptations of specimen N to its habitat.

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(c) Put the boiling water in a beaker and dip specimen N in the hot water. Using the wooden splint, turn the specimen to make observations on both surfaces while dipped in the water.

(i) State difference in the observations made on the upper and lower surfaces of the specimen. (2 marks)

Upper Surface	Lower Surface
.....	.....
.....	.....
.....	.....

(ii) Account for the difference in the observations made in (c)(i). (3 marks)

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(d) Peel off the epidermis from specimen P. Mount a portion on a slide, cover with a cover slip and observe under a light microscope.

(i) Make a labelled drawing of the observed image. (3 marks)

(ii) Describe how you would determine the magnification of the image. (1 mark)

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