

FORM FOUR CLUSTER KCSE MODEL 11

BIOLOGY PAPER 3 QUESTIONS

1. The figure below represents a system in a mammal and associated organs. Examine it carefully.
a) Name the system shown above. (1 mark)

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- b) Name parts P, R, S and T. (4 marks)

P.....

R.....

S.....

T.....

- c) State two digestive functions of the substance produced by part S. (2 marks)

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- d) State three features that increase the surface area of part T. (3 marks)

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2. You are provided with the following micrographs obtained from a plant stem. [Micrographs attached]

- a) With reason identify the habitat of the plant from which the cross section 2 was obtained. (1 mark)

Habit	Reason

- b) State the part and the class of a plant from which the cross section I was obtained. Give reason. (1½ marks)

Part	Class	Reason
On the micro 1 label three parts. (3marks)		

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- c) On the photomicrograph 2 identify and label the air canal and epidermis. (2 marks)

- d) You are provided with specimen P belonging to animalia kingdom. Study and answer question that follow.

With reasons state the class to which the specimen belongs. (1½ marks)

Class	Reason

- e)i) Take the specimen P and place it on a white tile. Remove the operculum to expose the gills. Remove one of the gills and examine it carefully using a hand lens. Draw and label the gill. (2 marks)

- ii) State two ways in which the gill is adapted to its functions. (2 marks)

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3. You are provided with an Irish potato tuber and two solutions L1 and L2. Push a cork borer through the potato tuber to obtain cylinders. Repeat this to obtain 3 potato cylinders. Trim the ends to ensure the potato tuber is 1.5cm long. Put the 3 cylinders in L1 obtain 3 similar cylinders of 1.5 cm long each and put them in liquid L2. Let the set ups to stand for 30 minutes. Tabulate your results in the table below.

Solution	Cylinder	Initial length(mm)	Final length(mm)	Average change in length(mm)
L1	1	150
	2	150
	3	150
L2	1	150
	2	150
	3	150

(ii) State the nature of solution L1 and L2. (2 marks)

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b) Explain the differences in the average change in length of potato cylinders between solution L1 and L2. (4 marks)

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c) i) Name the physiological process being investigated. (1 mark)

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ii) Give four roles of the process you named in d (i) above in plants. (4 marks)

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