1 Some students carried out an investigation into the movement of food molecules from the intestines using a length of Visking tubing to represent a part of the digestive system. Visking tubing is made of a flexible transparent material.

- One end of the length of tubing was securely tied to close it as shown in Fig. 1.1.
- This tubing was filled with a solution containing both the reducing sugar glucose, and starch.
- The outside of the tubing was rinsed with water.
- The tubing was placed into a large test-tube filled with clean water and held closed and in position, by a clip.

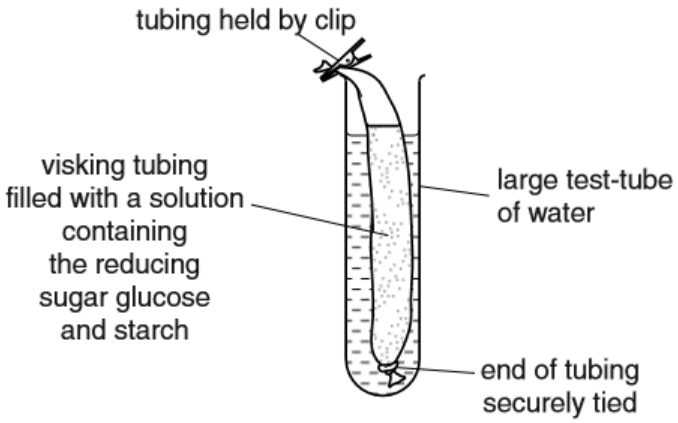

Fig. 1.1

Samples of the water from the large test-tube were tested for the presence of reducing sugar and starch at different time intervals.

(a) Describe how you could safely test for the presence of

(i) reducing sugar

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(ii) starch.

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(b) Explain why the outside of the tubing was rinsed before it was put into the large testtube of water.

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.....[1]

The results from the samples of water tested are shown in Table 1.1.

Table 1.1

sampling time / min	reducing sugar test	starch test
0	negative	negative
2	negative	negative
20	positive	negative

(c) Suggest and explain what had happened during the 20 minutes to produce these results.

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(d) Suggest, giving your reasons, which part of the digestive system might be represented by the Visking tubing in the water in this investigation.

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[Total: 15]

3 Fig. 3.1 shows some parts of an insect-pollinated flower.

scale × 1

Fig. 3.1

(a) (i) Make a large drawing of this flower and label stamen, stigma and style.

(ii) Describe two visible features of this flower that indicate it is pollinated by insects.

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2 .....
[2]

(b) Describe, giving practical details, how you would prepare some pollen grains from this flower for examination under the microscope.

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[Total: 11]