1. You are provided with a plant structure Q, solution H and distilled water. Using cork borer and razor blade, make five cylinders from plant structure Q. Trim each of the cylinders to measure 2.0cm in length. Label five test tubes as 1, 2, 3, 4 and 5. Place one cylinder in each of the test tubes. Boil cylinder in test tube 5, pour off the hot water and allow the cylinder to cool while inside its test tube.

a) Carry out the tests in Table 1 below. Record your observations and the time taken for each of the cylinders to float. (7 ½ **marks)**

Table 1

Procedure	**Observation**	**Time in seconds**
i) To the cylinder in test tube 1, add $5cm^3$ of solution H		
ii) To the cylinder in test tube 2, add $2cm^3$ of distilled water, followed by $3cm^3$ of solution H.		
iii) To the cylinder in test tube 3, add $4cm^3$ of distilled water, followed by $1cm^3$ of solution H.		
iv) To the cylinder in test tube 4, add $5cm^3$ of distilled water.		
v) To the cylinder in test tube 5, add $5cm^3$ of solution H		

b) State the factors being investigated in the experiment. **(2marks)**

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c) Explain your results obtained in the following test tubes **(8marks)**

i) Test tube 1

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ii) Test tube 3

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iii) Test tube 4

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iv) Test tube 5

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d) What would be the effect of using several smaller pieces of cylinders of structure Q in test tube 1? **(1 ½ marks)**

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