

GCSE Physics A (Gateway)

J249/01 Physics A P1-P4 and P9 (Foundation Tier)

Question Set 15

1 A student puts an ice cube into a beaker. The mass of the ice cube is 40 g.
The ice cube melts.

(a) (i) Write down the mass of the water produced.

Mass= 40 g [1]

(ii) Explain your answer to (a)(i). [2]

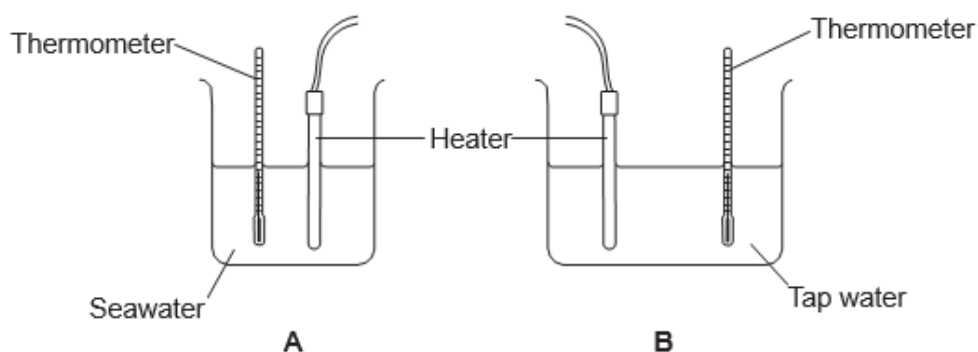
Because none of the ice cube has been removed therefore when melted it will be the same amount. (mass conservation principle)

(b) Describe one difference between a physical change and a chemical change. [1]

A chemical change involves in formation of new compound whereas in physical change the kind of matter changes without forming new compound.

(c) A student does an experiment to find the difference between the specific heat capacities of seawater and tap water.

The student places a heater and a thermometer into two beakers, A and B. Look at the diagram.



(i) There are 5 steps to the method for this experiment.

Complete the missing steps for this method.

Step 1 – Put seawater into beaker A and tap water into beaker B.

Step 2 – measure the initial temperatures of beaker A and B.

Step 3 – turn the heaters in beaker A and B on for same time

Step 4 – measure the final temperatures of beaker A and B

Step 5 – Calculate the temperature change of beaker A and beaker B.

[3]

- (ii) Suggest **one** mistake the student made when choosing their equipment. [1]

They didn't insulate their beaker

Suggest **two** improvements to the method followed

material.

1 To insulate their beaker by wrapping with insulating material ✓

2 Cover the immersion heater fully with the water. [2]

Total Marks for Question Set 15: 10

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