OCR
Oxford Cambridge and RSA

GCSE Physics A (Gateway)

J249/03 Physics A P1-P4 and P9 (Higher Tier)

Question Set 9

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]**

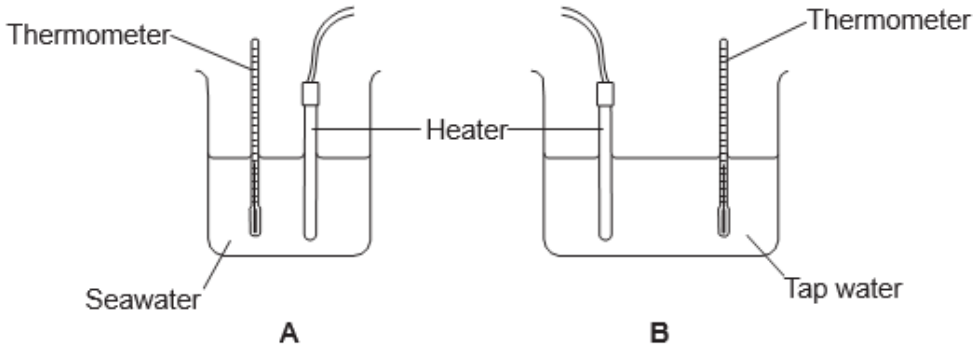
(ii) Explain your answer to **(a)(i)**. Because none of the ice cube has been removed therefore when melted it will be the same amount. **[2]**

(b) Describe **one** difference between a **physical change** and a **chemical change**.

A chemical change means the kind of matter changes where as in physical change the kind of matter doesn't **[1]**

(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

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.

They didn't insulate their beaker **[1]**

Suggest **two** improvements to the method followed

1 To insulate their beaker

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

Total Marks for Question Set 9: 10