

**GCSE Physics B (Twenty First Century Science)**  
**J259/03** Depth in physics (Higher Tier)

**Question Set 27**

1 Amir investigates how insulation affects the rate of cooling.

He writes down his method.

1. Fill a metal tin with water at 80 °C.
2. Wait for 10 minutes.
3. Measure the new temperature and write it down.
4. Repeat the experiment for each of these types of insulation:

Experiment	Insulation
A	None
B	1 layer of aluminium foil
C	1 layer of bubble wrap
D	3 layers of bubble wrap
E	1 layer of bubble wrap and 1 layer of aluminium foil

(a) Predict which experiment will cool down the slowest. Explain your answer.

[2]

(b) Amir's teacher reads his method. The teacher says that the method is not detailed enough to make the experiment **reproducible**.

(i) Explain the meaning of the word **reproducible**.

[2]

(ii) Give **one** piece of additional information that you would need to **reproduce** Amir's experiment.

[1]

**Total Marks for Question Set 27: 5**

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