AQA GCSE PHYSICS (HIGHER) · 8463

PHYSICS



MARK SCHEME

4.3.2.3 CHANGES OF HEAT AND SPECIFIC LATENT HEAT (PACK 1)

SCORE	PERCENTAGE
/30	%

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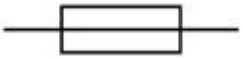
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Q1.

(a) 

1

(b) E = 13 × 230

1

E = 2990 (J)

1

*an answer 2990 (J) scores **2** marks*

(c) charge flow = current × time

allow Q = It

1

(d) 1.52 = I × 0.40

1

$$I = \frac{1.52}{0.40}$$

1

I = 3.8 (A)

1

*an answer of 3.8 (A) scores **3** marks*

(e) E = 0.00175 × 205 000

1

E = 359 (J)

*allow an answer that rounds to 360 (J) for **2** marks*

1

*an answer of 359 (J) scores **2** marks*

[9]

Q2.

(a) Student A's measurements had a higher resolution

1

Student B was more likely to misread the temperature

1

(b) a random error

1

(c) 8.4 °C

1

(d) 740 (seconds)

allow answers in the range 730 – 780

1

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(e) 0.40 × 199 000

1

79 600 (J)

1

*accept 79 600 (J) with no working shown for **2** marks*

(f) stearic acid has a higher temperature than the surroundings

accept stearic acid is hotter than the surroundings

1

temperature will decrease until stearic acid is the same as the room temperature / surroundings

1

[9]

Q3.

(a) **solid**

particles vibrate about fixed positions

1

closely packed

accept regular

1

gas

particles move randomly

accept particles move faster

accept freely for randomly

1

far apart

1

(b) amount of energy required to change the state of a substance from liquid to gas (vapour)

1

unit mass / 1 kg

dependent on first marking point

1

(c) 41000 **or** 4.1×10^4 (J)

accept

41400 or 4.14×10^4

correct substitution of

*$0.018 \times 2.3 \times 10^6$ gains **1** mark*

2

(d) **AB**

changing state from solid to liquid / melting

1

at steady temperature

*dependent on first **AB** mark*

1

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BC
temperature of liquid rises

1

until it reaches boiling point

*dependent on first **BC** mark*

1

[12]

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