

Name of the Student: _____

Max. Marks : 22 Marks

Time : 22 Minutes

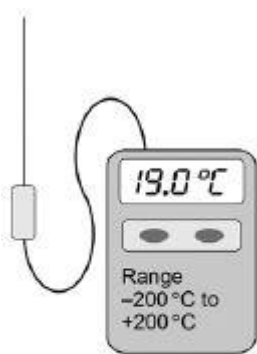
Mark Schemes

Q1.

- (a) at random speeds in random directions

1

- (b) 3rd thermometer ticked



1

- (c) to prevent (frost/cold) burns
allow to prevent frostbite

or

to prevent injury from the cold nitrogen

1

- (d) decreased

1

decreased

1

- (e) $860 = 0.00320 \times c \times 215$

1

$$c = \frac{860}{0.00320 \times 215}$$

1

$$c = 1250 \text{ (J/kg}^\circ\text{C)}$$

1

- (f) temperature stays the same

(g) a change of state from liquid to gas

1

1

(h) $1440 = 0.0072 \times L$

1

$$L = \frac{1440}{0.0072}$$

1

$$L = 200\,000 \text{ (J/kg)}$$

1

[13]

Q2.

(a) gradient = $\frac{250 - 0}{50 - 0}$

allow any correct pair of values substituted

1

$$\text{speed} = 5.0 \text{ m/s}$$

allow 5 (m/)

allow the use of $s = v t$

1

(b) gravitational force

1

(c) $W = 30 \times 250$

1

$$W = 7500$$

1

J

1

(d) frictional

1

kinetic

1

chemical

1

[9]