

Name of the Student: _____

Max. Marks : 18 Marks

Time : 18 Minutes

Mark Schemes

Q1.

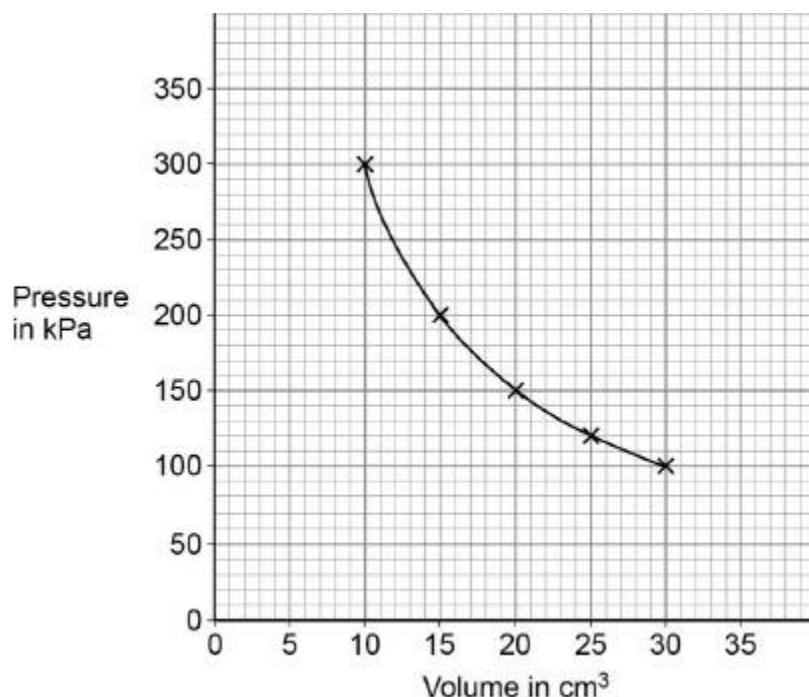
(a) random directions

1

(b) a range of speeds

1

(c)



2 marks for plotting 4 points correctly

1 mark for plotting 2 or 3 points correctly

1 mark for line of best fit

3

(d) $300 \times 10 = \text{constant}$

allow use of any correct pair of values

1

constant = 3000

1

(e)

Quantity	Decreases	Stays the same	Increases
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Mean time between collisions of the particles with the tube			✓
Mean distance between the particles			✓
Mean speed of the particles		✓	

additional tick in a row negates the mark for that row

3

[10]

Q2.

(a) balance

1

(b) control variable

1

(c) use tongs / gloves

or

use a heatproof mat

*allow other sensible methods of avoiding contact with hot beaker eg
using a cloth*

allow wait for the beaker (and hot water) to cool down

1

(d) $25\,200 = 0.0090\,L$

1

$$L = \frac{25\,200}{0.0090}$$

1

$$L = 2\,800\,000$$

or

$$L = 2.8 \times 10^6$$

1

J/kg

1

(e) the transfer of thermal energy from the water to the surroundings

1

[8]