Practice Question Set For GCSE
**Subject : Physics**
**Paper-1 Topic: GCSE Triple Science_Particle Model Of Matter (High Demand Questions)**

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**Name of the Student**:_____

**Max**. **Marks : 26 Marks**                                               **Time : 26 Minutes**

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**Q1.**

A student investigated the density of different fruits.

The table below shows the results.

| Fruit | Density in g/cm$^3$ |
|-------|---------------------|
| Apple | 0.68 |
| Kiwi | 1.03 |
| Lemon | 0.95 |
| Lime | 1.05 |

(a)   The student determined the volume of each fruit using a displacement can and a measuring cylinder.

What other piece of equipment would the student need to determine the density of each fruit?

_____

**(1)**

(b)   Write down the equation which links density ($\rho$), mass ($m$) and volume ($V$).

_____

**(1)**

(c)   The mass of the apple was 85 g.

The density of the apple was 0.68 g/cm$^3$.

Calculate the volume of the apple.

Give your answer in cm$^3$.

_____

_____

_____

_____

_____

Volume = _____ cm$^3$

(d)     The student only measured the volume of each fruit once.

The volume measurements **cannot** be used to show that the method to measure volume gives precise readings.
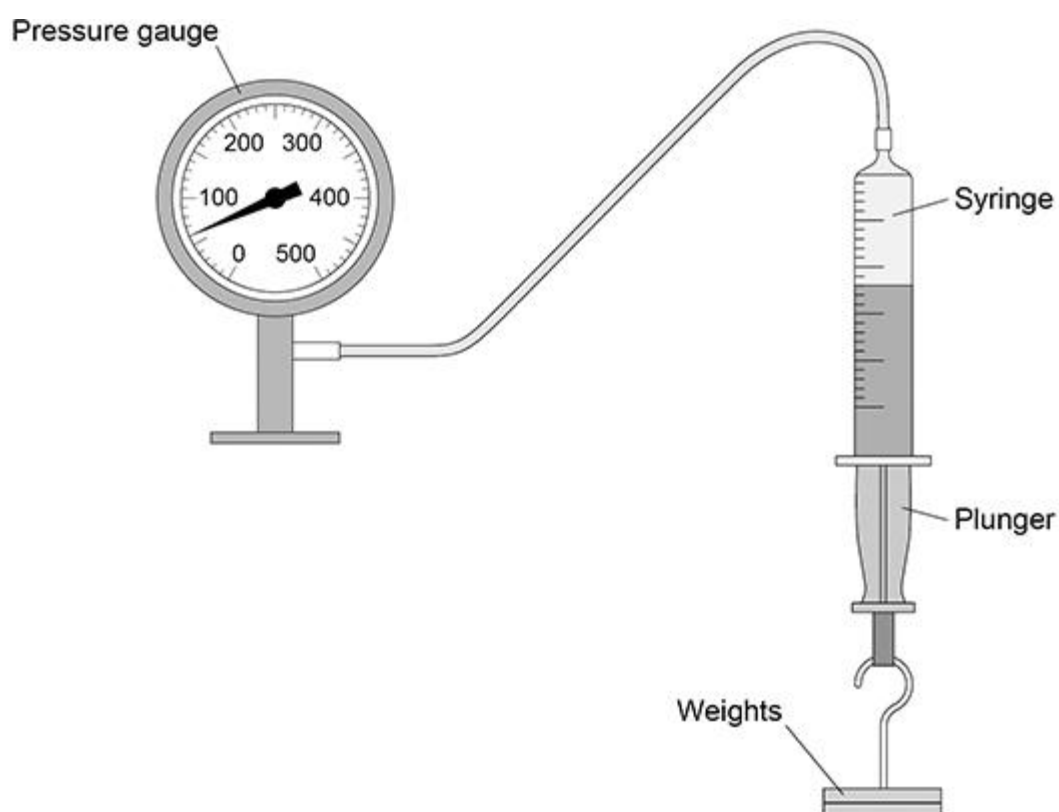
Give the reason why.

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_____

_____

**(1)**
**(Total 6 marks)**

## Q2.

A teacher demonstrated the relationship between the pressure in a gas and the volume of the gas.

The figure below shows the equipment used.



This is the method used.

1.      Record the initial volume of gas in the syringe and the pressure reading before any weights are attached.

2.      Attach a 2.0 N weight to the syringe.

3.      Record the volume of the gas and the reading on the pressure gauge.

4.      Repeat steps 2 and 3 until a weight of 12.0 N is attached to the syringe.

(a) What was the range of force used?

From _____ N to _____ N

**(1)**

(b) Give **one** control variable in the investigation.

_____

**(1)**

(c) When the volume of gas in the syringe was 45 cm$^3$, the pressure gauge showed a value of 60 kPa.

Calculate the pressure in the gas when the volume of gas in the syringe was 40 cm$^3$.

_____

_____

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Pressure = _____ kPa

**(4)**

(d) When the volume of gas in the syringe increased, the pressure on the inside walls of the syringe decreased.

Explain why.

_____

_____

_____

_____

_____

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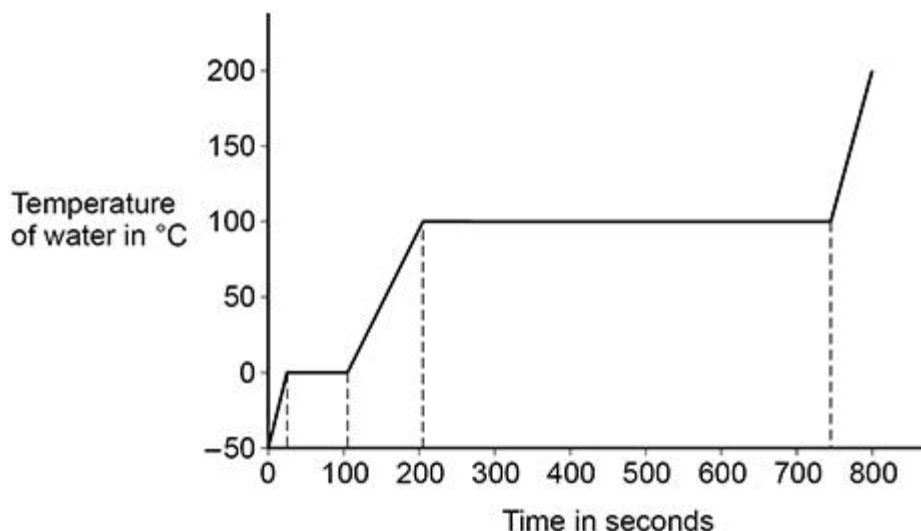
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**(3)**
**(Total 9 marks)**

# Q3.

A student investigated how the temperature of a lump of ice varied as the ice was heated.

The student recorded the temperature until the ice melted and then the water produced boiled.

The figure below shows the student's results.

The power output of the heater was constant.



(a) The specific heat capacity of ice is less than the specific heat capacity of water.

Explain how the figure above shows this.

_____

_____

_____

_____

**(2)**

(b) The specific latent heat of fusion of ice is less than the specific latent heat of vaporisation of water.

Explain how the figure above shows this.

_____

_____

_____

_____

**(2)**

(c) A second student did the same investigation and recorded the temperature until the water produced boiled.

In the second student's investigation more thermal energy was transferred to the surroundings.

Describe **two** ways the results of the experiment in the figure above would have been different.

1 _____

_____

_____

_____

2 _____

_____

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_____

**(2)**

(d)   When the water was boiling, 0.030 kg of water turned into steam.

The energy transferred to the water was 69 kJ.

Calculate the specific latent heat of vaporisation of water.

Give the unit.

_____

_____

_____

_____

_____

_____

_____

Specific latent heat of vaporisation = _____

Unit _____

**(5)**
**(Total 11 marks)**