

(c) Convert the following temperature (in °C) to the Kelvin scale.

- i. -100°C
- ii. 273°C
- iii. 20°C
- iv. 5°C
- v. 300°C

[5]

Question 6

(a)

Identify metals, non-metals and inert gases from the following elements and give reasons in support of your answer.

Chlorine, magnesium, argon, phosphorus, potassium

[5]

(b) The description of atomic particles of two elements X and Y is given below:

	X	Y
Protons	8	8
Neutrons	8	9
Electrons	8	8

- i. What is the atomic number of Y?
- ii. What is the mass number of X?
- iii. What is the relation between X and Y?
- iv. Which element/elements do they represent?
- v. Write the electronic configuration of X?

[5]

Question 7

(a) Hydrogen gas occupies a volume of 400 cm^3 at a temperature of 27°C and normal atmospheric pressure. Find the volume of the gas at 10°C at constant pressure. [3]

(b) 6 dm^3 of dry gas is collected at a temperature of 27°C and pressure of 700 mmHg . Find the volume of the gas at STP. [2]

(c) State the law of conservation of mass. Describe its experimental verification. [5]