

Question 6

(a) Write balanced chemical equations for the reaction of hydrogen with

- i. Oxygen
 - ii. Sulphur
- [2]

(b) Deduce the molecular formula of the following:

- i. Calcium nitrate
 - ii. Sodium chloride
 - iii. Magnesium sulphate
 - iv. Ammonium bicarbonate
 - v. Aluminium oxide
- [5]

(c) How many valence electrons are present in

- i. Potassium
 - ii. Calcium
 - iii. Sulphur
 - iv. Nitrogen
 - v. Argon
 - vi. Oxygen
- [3]

Question 7

(a) Calculate the final volume of a gas 'X' if the pressure of the gas, originally at STP, is doubled and its temperature is made three times. [3]

(b) 50 cm³ of hydrogen is collected over water at 17°C and 750 mm Hg pressure. Calculate the volume of a dry gas at STP. The water vapour pressure at 17°C is 14 mm Hg. [5]

(c) State (i) the three variables for gas laws and (ii) the SI unit of these variables. [2]