

## Chapter 3 Atoms and Molecules

### 1 mark questions

- Q.1 What does the symbol 'u' represent?
- Q.2 Write the chemical symbols and Latin names of (i) gold and (ii) mercury?
- Q.3 What is the valency of calcium I in  $\text{CaCO}_3$ ?
- Q.4 What happens to an element 'A' if its atom gains two electrons?
- Q.5 The valency of an element A is 4. Write the formula of its oxide.

### 2 marks questions

- Q.1 Calculate the formula unit mass of  $\text{CaCl}_2$ ?
- Q.2 Sample A contains one gram molecules of oxygen molecules and sample B contains one mole of oxygen molecules. What is the ratio of the number of molecules in both the sample?
- Q.3 List the elements present in (i) quick lime (ii) sodium hydrogen carbonate.
- Q.4 What is the number of molecules present in 1.5 moles of ammonia ( $\text{NH}_3$ ) ?
- Q.5 Write the chemical symbols of two elements  
(a) Which are formed from the first letter of the elements name.  
  
(b) Whose name has been taken from the names of the elements in Latin.

### 3 marks questions

- Q.1 (a) If the valency of carbon is 4 and that of sulphur is 2, write the formula of the compound formed between carbon and sulphur atoms. Also name the compound.  
(b) What is wrong with the statement '1 mole of hydrogen'?
- Q.2 Give the formulae of the compounds that will be formed from the following sets of elements.  
(a) Calcium & Fluorine (b) Magnesium & Oxygen (c) Sodium & Sulphur  
(d) Carbon & chlorine (e) Carbon & Sulphur (f) Nitrogen & hydrogen
- Q.3 Calculate the total number of ions in 0.585 g of sodium chloride.

Q.4 A flask contains 4.4 g of CO<sub>2</sub> gas. Calculate

(a) How many moles of CO<sub>2</sub> gas does it contain?

(b) How many molecules of CO<sub>2</sub> gas are present in the sample.

(c) How many atoms of oxygen are present in the given sample.

Q.5 A sample of vitamin C contains  $2.48 \times 10^{25}$  oxygen atoms. How many moles of oxygen atoms are present in the sample ? 5 marks question

### 5 marks questions

Q.1 Determine the molecular mass of:

(a) NH<sub>4</sub>OH (b) K<sub>2</sub>CO<sub>3</sub> (c) CH<sub>3</sub>COOH (d) CH<sub>3</sub>OH (e) SO<sub>2</sub>

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