

**ICSE Board
Class IX Chemistry
Sample Paper - 1**

Time: 2 hrs

Total Marks: 80

General Instructions:

1. Answers to this paper must be written on the paper provided separately.
2. You will **not** be allowed to write during the first **15** minutes.
This time is to be spent in reading the question paper.
3. The time given at the head of the paper is the time allotted for writing the answers.
4. Attempt **all** questions from **Section I** and **any four** questions from **Section II**.
5. The intended marks of questions or parts of questions are given in brackets [].

SECTION I (40 Marks)

Attempt **all** questions from this section.

Question 1

(a) Select the acidic and basic radicals in the following compounds [5]

- (i) MgSO_4
- (ii) $(\text{NH}_4)_2\text{SO}_4$
- (iii) $\text{Al}_2(\text{SO}_4)_3$
- (iv) ZnCO_3
- (v) $\text{Mg}(\text{OH})_2$

(b) Give an example of each of the following chemical changes.

1. A photochemical reaction involving

- (i) silver salt
- (ii) water

2. State the type of reactions each of the following represent and balance the ones that are not balanced.

- (i) $\text{Cl}_2 + 2\text{KBr} \rightarrow 2\text{KCl} + \text{Br}_2$
- (ii) $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$
- (iii) $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$

[5]

(c) State the valency and the formula of the following radicals:

- (i) Phosphide
- (ii) Plumbous
- (iii) Mercuric
- (iv) Manganate
- (v) Silicate

[5]

(d) Deduce the molecular formula of the following: [5]

- (i) Ammonium acetate
- (ii) Lead chromate
- (iii) Calcium carbide
- (iv) Aluminium carbide
- (v) Sodium bicarbonate

(e)

- (i) Define valency.
- (ii) How many valence electrons are present in
(a) Fluorine; (b) Carbon; (c) Oxygen; (d) Calcium [5]

(f) Define:

- (i) Reducing agent
- (ii) Oxidising agent
- (iii) Synthesis reaction
- (iv) Direct combination reaction
- (v) Decomposition reaction

(g) Name the following: [5]

- (i) a nitrate which produces oxygen as the only gas.
- (ii) a compound which produces carbon dioxide on heating
- (iii) an element which does not contain neutron
- (iv) An element having valency 'zero'
- (v) The shell closest to the nucleus of an atom

(h) Fill in the blanks: [5]

- (i) Gases have _____ density.
- (ii) Nitric oxide is _____ toxic.
- (iii) The full form of CFC is _____.
- (iv) Ozone absorbs the harmful _____ rays coming from the Sun.
- (v) The 'K shell' can accommodate a maximum of _____ electrons.

SECTION II (40 Marks)

Attempt any **four** questions from this section.

Question 2**(a)**

- (i) How will you show that thermal decomposition of calcium carbonate is in accordance with the law of conservation of mass? [5]
- (ii) Boiled or distilled water tastes flat [5]

(b)

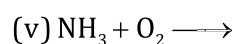
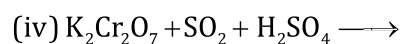
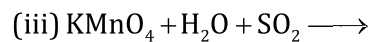
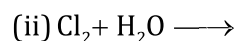
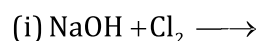
- (i) Write the reaction of steam with red hot iron.
- (ii) Why this reaction is considered as reversible reaction?
- (iii) How the reaction can proceed continuously
- (iv) Compare :Sodium atom and sodium ion

(c) Give the meaning of

- (i) Reducing agent
- (ii) Oxidising agent
- (iii) Synthesis reaction
- (iv) Direct combination reaction
- (v) Decomposition reaction [5]

Question 3**(a)** Balance the following equations:

[5]

**(b)** State which of the following are oxidised or reduced:

- (i) $\text{S}^{2-} \rightarrow \text{S}$
- (ii) $\text{Cl}^- \rightarrow \text{Cl}$
- (iii) $\text{Cr}^{7+} \rightarrow \text{Cr}^{5+}$
- (iv) $\text{Mn}^{5+} \rightarrow \text{Mn}^{7+}$
- (v) $\text{Fe}^{2+} \rightarrow \text{Fe}^{3+}$

[5]

Question 4

(a) Define the following:

- (i) Solution
- (ii) Crystallisation
- (iii) Hard water

[3]

(b) What are drying agents? Name the drying agents for the following gases:

- (i) Chlorine
- (ii) Hydrogen chloride
- (iii) Ammonia
- (iv) Sulphur dioxide

[4]

(c) (i) Define an electrovalent bond

[1]

(ii) Water is the universal solvent'. Comment.

[2]

Question 5

(a) Identify the element present in the following groups and periods:

- (i) Group 1, Period 5
- (ii) Group 11, Period 2
- (iii) Group 16, Period 2
- (iv) Group 17, Period 3
- (v) Group 18, Period 4

[5]

(b) The electronic configuration of an element T is 2, 8, 7.

- (i) What is the group number of T?
- (ii) What is the period number of T?
- (iii) How many valence electrons are there in an atom of T?
- (iv) What is the valency of T?
- (v) Is it a metal or a non-metal?

[5]

Question 6

(a) Give reason.

[5]

- (i) The atom is electrically neutral.
- (ii) The mass of an atom is concentrated in the nucleus of an atom.
- (iii) The atom as a whole is an empty space.
- (iv) The Rutherford model of an atom could not provide stability to the nucleus.
- (v) Why do the two isotopes of magnesium have different mass numbers?

(b) Comment on the similarity of hydrogen with alkali metals and halogens.

[5]

Question 7

(a) A gas occupies 3 litres at 0°C. What volume will it occupy at -20°C, the pressure remaining constant?

[5]

(b) Give the composition and cause of acid rain.

[5]