

**ICSE Board**  
**Class IX Chemistry**  
**Paper - 2**

**Time: 2 hrs**

**Total Marks: 80**

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**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 [ ].
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**SECTION I (40 Marks)**

*Attempt **all** questions from this section.*

**Question 1**

**(a)** Define the following:

- i. Symbol
- ii. Residue
- iii. Distillate
- iv. Distillation
- v. Effervescence

[5]

**(b)** Complete and balance the following equations:

- i.  $\text{Cu} + \text{HNO}_3 \rightarrow \text{_____} + \text{_____} + \text{_____}$
- ii.  $\text{FeSO}_4 \rightarrow \text{_____} + \text{_____} + \text{SO}_3$
- iii.  $\text{Pb}_3\text{O}_4 + \text{HCl} \rightarrow \text{PbCl}_2 + \text{_____} + \text{_____}$
- iv.  $\text{H}_2\text{S} + \text{SO}_2 \rightarrow \text{_____} + \text{_____}$
- v.  $\text{Ca}(\text{NO}_3)_2 \rightarrow \text{CaO} + \text{_____} + \text{_____}$

[5]

**(c)** Give the names of the following compounds:

- i.  $\text{Na}_2\text{O}_2$
- ii.  $\text{Zn}(\text{OH})_2$
- iii.  $\text{KHCO}_3$
- iv.  $\text{K}_4[\text{Fe}(\text{CN})_6]$
- v.  $\text{NaClO}$

[5]

**(d)**  $\text{MSO}_4$  is a sulphate of a metal. Write the formula of its

- i. Chloride
- ii. Hydroxide
- iii. Carbonate
- iv. Oxide
- v. Nitrate

[5]

**(e)** Give the chemical names of the following salts:

- i.  $\text{NaBr}$
- ii.  $\text{Zn}_3\text{P}_2$
- iii.  $\text{CaC}_2\text{O}_4$
- iv.  $(\text{NH}_4)_2\text{S}$
- v.  $\text{AgCl}$

[5]

**(f)** Name the reducing agent in the following reactions:

- i.  $\text{Fe}_2\text{O}_3 + 3\text{CO} \rightarrow 2\text{Fe} + 3\text{CO}_2$
- ii.  $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$
- iii.  $\text{ZnO} + \text{C} \rightarrow \text{Zn} + \text{CO}$
- iv.  $3\text{CuO} + 2\text{NH}_3 \rightarrow 3\text{Cu} + \text{N}_2 + 3\text{H}_2\text{O}$
- v.  $\text{PbO} + \text{C} \rightarrow \text{Pb} + \text{C}$

[5]

**(g)**

- i. Why physical properties of isotopes are different
- ii. Why is steam more dangerous than boiling water?

[5]

**(h)**

- i. What is Charles' law?
- ii. Why does a desert cooler cool better on a hot dry day?

[5]

## SECTION II (40 Marks)

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

### Question 2

(a) Give reasons for the following:

- Hydrogen show dual nature?
- Gases diffuse rapidly.
- Rivers and lakes not freeze easily?

(b) Name the solvent for the following precipitates:

- Silver chloride
  - Lead sulphate
  - Lead chloride
  - Copper hydroxide
  - Zinc hydroxide
  - Silver nitrate
- [3]

(c) What is latent heat of vaporisation? [1]

### Question 3

(a)

- What are solubility curves? Give their uses. [3]
- Give a chemical test for:  
An oxidizing agent  
a reducing agent

(b) Write the balanced equations:

- $\text{Fe} + \text{CuSO}_4 \rightarrow \text{FeSO}_4 + \text{Cu}$
- $2\text{HgO} \rightarrow 2\text{Hg} + \text{O}_2$
- $\text{PbO}_2 + \text{SO}_2 \rightarrow \text{PbSO}_4$
- $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$
- $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$

[3]

(c) Draw a neat and labelled diagram of Bohr's model of an atom. [2]

**Question 4**

- (a) What is the effect of increasing and decreasing pressure on the solubility of a gas in a liquid? [2]
- (b) State which salts increase in weight, decrease in weight or remain the same when exposed to the atmosphere.
- i. Sodium hydroxide
  - ii. Ferric chloride
  - iii. Green vitriol
  - iv. Conc. sulphuric acid
  - v. Common salt
  - vi. Glauber's salt
- [6]
- (c) Why is it necessary to compare gases at STP? [2]

**Question 5**

- (a) The following questions are related to the long form of the periodic table.
- i. State the modern periodic law.
  - ii. In which group are halogens placed in the long form of the periodic table?
  - iii. In the long form of the periodic table, the elements are arranged in the ascending order of \_\_\_\_\_.
  - iv. The number of shells is equal to the number of \_\_\_\_\_.

**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 cm<sup>3</sup> 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]