

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

**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 [ ].

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**SECTION I (40 Marks)**

Attempt **all** questions from this section.

**Question 1**

**(a)** Define the following: [5]

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

**(b)** Complete and balance the following equations: [5]

- (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)  $\text{Ca}(\text{NO}_3)_2 \rightarrow \text{CaO} + \text{_____} + \text{_____}$

**(c)** Give the names of the following compounds: [5]

- (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)  $\text{NaClO}$

**(d)**  $\text{MSO}_4$  is a sulphate of a metal. Write the formula of its [5]

- (i) Chloride
- (ii) Hydroxide
- (iii) Carbonate
- (iv) Oxide
- (v) Nitrate

**(e)** Give the chemical names of the following salts: [5]

- (i) NaBr
- (ii)  $Zn_3P_2$
- (iii)  $CaC_2O_4$
- (iv)  $(NH_4)_2S$
- (v) AgCl

**(f)** Name the reducing agent in the following reactions: [5]

- (i)  $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$
- (ii)  $CuO + H_2 \rightarrow Cu + H_2O$
- (iii)  $ZnO + C \rightarrow Zn + CO$
- (iv)  $3CuO + 2NH_3 \rightarrow 3Cu + N_2 + 3H_2O$
- (v)  $PbO + C \rightarrow Pb + C$

**(g)** Name the solvent for the following precipitates: [5]

- (i) Silver chloride
- (ii) Lead sulphate
- (iii) Lead chloride
- (iv) Copper hydroxide
- (v) Zinc hydroxide

**(h)** Each question has four options out of which only one option is correct. Write the correct option. [5]

1. Which of the following is NOT an exothermic reaction?

- I. Burning of coal
- II. Rusting
- III. Respiration
- IV. Photosynthesis

2. Humidity is the amount of \_\_\_\_\_ present in the air.

- I. Water vapour
- II. Oxygen
- III. Carbon dioxide
- IV. Dust particles

3. Which of the following colloids is a gel?

- I. Blood
- II. Smoke
- III. Cheese
- IV. Fog

4. Which of the following are deliquescent substances?

- I. Glauber salt
- II. Calcium chloride
- III. Copper oxide
- IV. Ammonium chloride

**SECTION II (40 Marks)**

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

**Question 2**

- (a) Give reasons for the following: [4]
- (i) Hydrogen show dual nature.
  - (ii) Rivers and lakes not freeze easily.
- (b) (i) What is Charles' law? [4]
- (ii) Why does a desert cooler cool better on a hot dry day?
- (c) Why physical properties of isotopes are different. [2]

**Question 3**

- (a) (i) What are solubility curves? Give their uses. [3]
- (ii) Give a chemical test for:  
an oxidizing agent  
a reducing agent
- (b) Write the balanced equations: [3]
- (i)  $\text{Fe} + \text{CuSO}_4 \rightarrow \text{FeSO}_4 + \text{Cu}$
  - (ii)  $2\text{HgO} \rightarrow 2\text{Hg} + \text{O}_2$
  - (iii)  $\text{PbO}_2 + \text{SO}_2 \rightarrow \text{PbSO}_4$
  - (iv)  $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$
  - (v)  $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$
- (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. [6]
- (i) Sodium hydroxide
  - (ii) Ferric chloride
  - (iii) Green vitriol
  - (iv) Conc. sulphuric acid
  - (v) Common salt
  - (vi) Glauber's salt
- (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 \_\_\_\_\_.
- (v) \_\_\_\_\_ metals are present in Group 1 of the periodic table. [5]

(b) Explain Rutherford's scattering experiment in detail. [5]

**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]