

## II SEMESTER EXAMINATION, FEB. - 2025

Class - IX

Time: 2 hrs.

Sub: Chemistry

M.M.: 80

Answers to this paper must be written on the paper provided separately. You will not be allowed to write during the first 15 minutes. This time is to be spent in reading the question paper. The time given at the head of this paper is the time allowed for writing the answers.

Section A is compulsory. Attempt any four questions from Section B. The intended marks for questions or parts of questions are given in brackets [ ].

### Section A (40 Marks)

Attempt all questions from this Section.

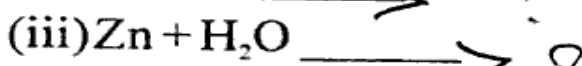
- Q2. Name the Following:** 5
- ✓ Name the method by which Alkali metals can be extracted.
  2. Name the central part of an atom where protons and neutrons are held together.
  3. Name the metal which can displays hydrogen from Alkalis.
  4. Name two gases which can be collected by downward displacement of water.
  5. Name the gas which turns lead acetate paper black.
- Q3.** (a) Draw orbital structure of Calcium oxide. 2
- (b) A sample of Nitrogen having volume 400 ml at a pressure of 4 atm is compressed to a volume of 200 ml. What amount of pressure will be required for this, if the temperature is kept constant. 3
- Q4. Fill in the blanks:** 5
1. Ozone layer exists in \_\_\_\_\_ region of atmosphere.
  2. Nitrogen dioxide gas turns \_\_\_\_\_ litmus to \_\_\_\_\_.
  3. The force exerted on a unit area of the wall of a container by a gas molecule enclosed in it, is equal to the \_\_\_\_\_ of the gas.

4. Group 17 elements are known as \_\_\_\_\_.
5. In the formation of a oxygen molecule \_\_\_\_\_ electrons are shared by each atom of oxygen.

**Q5. Give Reasons:**

- (a) 1. Why elements in the same group have similar chemical properties? 2
2. Why is hydrogen placed in group 1 and group 17 of the periodic table.

(b) Complete and balance the following reactions. 3



**Q6. Match the columns.**

5

Column A

Column B

Transition Metals

-Periods

Mass No.

-Removes oxygen from oxide

Reducing agent

-Rising sea levels

Horizontal rows

-Variable valency

Melting of polar ice caps

-Protons and Neutrons

**Section - B (40 Marks)**

**(Attempt any four questions)**

**Q2.**

(a) State modern periodic law.

(b) Arrange:

(i) Na, Mg, Si, P, Cl (increasing atomic radii)

(ii) Mg, Al, Na, S, Cl (decreasing metallic character)

(c) State the following.

4

Group 16	Group 17
	A
B	C

(i) Whether A is metal or non metal.

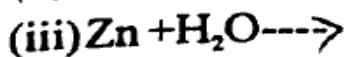
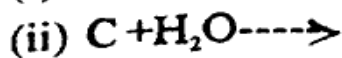
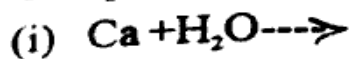
(ii) Whether C is more reactive than A.

(iii) Will C be larger or smaller than B.

(iv) Which type of ion will be formed by A.

(d) State three merits of modern periodic table.

(a) Complete the balance.



(b) Write two similarities between hydrogen and alkali metals. 2

(c) Write all the balanced equations of bosch process: 3

(d) How is hydrogen gas collected. Explain? 2

(a) State boyle's law and write its significance. 3

(b) Gases are highly compressible, Explain. 2

(c) A gas occupies 400 ml at 35°C and 620 mm Hg pressure. The volume of the gas at S.T.P will be? 3

(d) Explain Charle's law in terms of molecular motion. 2

(a) Derive gas equation. 3

(b) Explain the effect of moisture on the pressure of gas. 2

(c) Describe the impact of acid rain. 3

(d) Write the chemical equations of chlorofluorocarbons involved in the depletion of Ozone layer. 2

(i) Define Isotopes. Name three Isotopes of Hydrogen.

Explain Why three Isotopes of hydrogen have almost identical chemical properties. 4

(ii) What is greenhouse effect? Name two greenhouse gases. 2

(iii) Two non- metals combine with each other by the sharing of electrons to form a compound X. 4

(a) What type of chemical bond is present in X?

(b) Comment on the electric conductivity of X.

(c) Will it dissolve in an organic solvent.

(d) Draw the structure of sulphur atom showing protons, neutrons and electrons. 2

- 7 (i) Which two gases have a **bleaching** effect? Discuss their bleaching action. 2
- (ii) Give the relation between **degree Celsius** and kelvin. Convert 300K into degree **Celsius**. 2
- (iii) How will you distinguish between **Zinc Carbonate** and Zinc Nitrate. 2
- (iv) Give two examples of metals which **displays** hydrogen from dilute acids. write an equation to show this action. 2
- (v) The elements A, B, C belong to groups 1, 14 and 17 respectively of the periodic table. 2
- (a) Which two elements will form a covalent Compound?
- (b) Which two elements will form a Ionic Compound?

[ Internal Assessment - 20 Marks ]

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