

MRD-9th (2025)**Time: 3 Hours****CHEMISTRY-9th****Marks: 65****Note: There are three sections in this paper i.e, A,B & C?****Version: A****INSTRUCTION:**

- Please attempt Section-A on the MCQs Answer Sheet only.
- Only black ball point or marker may be used for shading the relevant circle.
- Please make sure that there is no cutting, over writing, erasing, or multiple circles shading.

Time: 20 Minutes**SECTION-A****Marks: 12****Q1: Choose the correct option i.e, A,B,C or D?**

1. If a container contains 600ml of gas at 20°C. What is its volume at 60°C?
☐ 623ml ☐ 644ml ☐ 683ml ☐ 695ml
2. Atoms can easily cation if they have.
☐ Zero ionization energy ☐ High ionization energy
☐ Moderate ionization energy ☐ Low ionization energy
3. All of the given solutions are the type of gaseous solution except.
☐ Gas in gas ☐ Liquid in gas
☐ Liquid in liquid ☐ Solid in gas
4. Which class of colloids represents the phrase "a gas dispersed in a liquid"?
☐ Aerosol ☐ Gel ☐ Butter ☐ Foam
5. The gain of oxygen refers to.
☐ Hydrogenation ☐ Oxidation ☐ Chlorination ☐ Reduction
6. Which type of cell generate an electrical potential from a spontaneous chemical reaction?
☐ Dry cell ☐ Electrolytic cell ☐ Voltaic cell ☐ Fuel cell
7. When oxides of magnesium are dissolved in water, they form.
☐ Basic solution ☐ Salt solution ☐ Aerosols ☐ Suspension
8. Identify tri-atomic molecule among the following:
☐ CO₂ ☐ Ar ☐ S₈ ☐ HCl
9. What happens to the volume of gas when pressure is increased?
☐ Volume increases ☐ Volume decreases
☐ Volume becomes zero ☐ Volume remains constant
10. Which of the following is used as tracer element in physio-chemical research?
☐ $\frac{1}{1}\text{H}$ ☐ $\frac{2}{1}\text{H}$ ☐ $\frac{3}{1}\text{H}$ ☐ $\frac{4}{1}\text{H}$
11. An element "X" has valency -2, it is placed in

- ☐ Group-II ☐ Group-IV ☐ Group-VI ☐ Group-VIII
12. The non-polar covalent bond is formed between elements having similar.
- ☐ Ionization energy ☐ Electro positivity value
☐ Electron affinity ☐ Electro negativity

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Time: 3 Hours

CHEMISTRY-9th

Marks: 50

SECTION-B

Marks: 30

Q2: Write short note to any EIGHT of the following parts. All parts carry equal marks?

- Why the properties of compounds are different from the elements from which it formed. Justify with suitable examples?
- Why Rutherford performed an experiment? What are the necessary arrangement he made for the experiment?
- Which atom in each of the following sets has smallest ionization energy and why?
 (a) Na, Mg, Al (b) Li, Na, K (c) Cl, Br, I (d) Be, C, N
- How many valence electron are present in given elements:
 (a) Carbon (b) Lithium (c) Francium (d) Beryllium
- What is the key difference between bonding in $MgCl_2$ and CO_2 molecule? Justify your answer with suitable reason?
- How surface area and temperature increases the rate of evaporation?
- What is the molarity of a solution that was prepared by dissolving 82.0g of $CaCl_2$ (molar mass=111.1g/mol) in enough water to make 812ml of solution?
- Why gasoline readily mixes with benzene but lithium chloride does not? Give suitable reason?
- Why HNO_3 and H_2SO_4 are considered as strong electrolytes? Explain with their dissociation reaction?
- How does anodes and cathodes works in an electrolytic cell? Explain with examples?
- Why alkali metals are highly electropositive elements? Give two examples?

SECTION-C

Marks: 20

Q3: Answer any THREE questions. All questions carry equal marks?

- (a) How many moles are in 12.044×10^{23} atoms of helium (He)?
 (b) Write electronic configuration of following elements in their subshells:
 (a) Magnesium (b) Silicon (c) Hydrogen (d) Argon
- (a) Define the following terms:
 (a) Transition elements (b) Lanthanide series (c) Actinide series

(b) Draw Lewis structure of the following compounds:

(a) N_2

(b) HCl

(c) Cl_2

(d) SO_2

3. (a) Why crystalline solids have sharp melting and boiling point?
(b) If 20g of $NaCl$ is dissolve in 80grams of solvent, so that solution weight 100g. Calculate percentage composition by mass?
4. (a) Identify reducing agents in the following reaction justify your answer with reference to oxidation state: $Br_2 + H_2S \rightarrow 2HBr + S$
(b) Why platinum is considered as eco-friendly element?

