



ST. JOSEPH'S COLLEGE, PRAYAGRAJ

FIRST UNIT TEST 2025-26

CHEMISTRY

CLASS – IX

TIME: 1 Hour

MM: 30

Q 1) Choose the correct answer from the options given below:

[4]

i. The symbol of cadmium is:

- a. Ca
- b. Cu
- c. Cm
- d. Cd

ii. The valency of sulphur in SO_2 is:

- a. Two
- b. Three
- c. Four
- d. Six

iii. A symbol represent a short form of:

- a. An atom of an element
- b. A molecule of an element
- c. A compound
- d. Both (a) and (b)

iv. Elements present in quick lime are:

- a. Cadmium and oxygen
- b. Calcium and oxygen
- c. Magnesium, oxygen and hydrogen
- d. Calcium, oxygen and hydrogen

Q 2) Fill in the blanks with the choices given in the bracket:

[3]

- a. The formula for the aluminium phosphate is _____, $[\text{Al}(\text{PO}_4)_3 / \text{AlPO}_4]$
- b. A _____ has more electrons than protons. [cation/ anion]
- c. _____ is the basic radical in MgSO_4 . $[\text{Mg}^{2+} / \text{SO}_4^{2-}]$

Q 3) State the valency of the element having:

[2]

- (a) 6 electrons in the valence shell.
- (b) the electronic configuration of: 2, 3

Q 4) Differentiate between atomic mass unit and relative atomic mass.

[2]

Q 5) MCl_2 is a chloride of metal M. Write down the formula of sulphate and hydroxide of M.

[2]

Q 6) Calculate the relative molecular mass of each of the following:

[2]

- (a) Ammonium dichromate $[(\text{NH}_4)_2\text{Cr}_2\text{O}_7]$
- (b) Hydrated Copper Sulphate $[\text{CuSO}_4.5\text{H}_2\text{O}]$
[H = 1, N = 14, O = 16, S = 32, Cr = 52, Cu = 64]

Q 7) Give a reason for each of the following:

[2]

- (a) Noble gases do not combine with other elements to form molecules.
- (b) Metals form positive ions.

Q 8) (a) Why some elements show variable valency?

[3]

- (b) How are the elements with variable valency named?
- (c) State the valency and formula of ferric ion.



Q 9) Calculate the percentage composition of:

[3]

- (a) Nitrogen in ammonia. [N = 14, H = 1]
- (b) Carbon in calcium carbonate. [Ca=40, C=12, O=16]
- (c) Oxygen in sodium hydroxide. [Na=23, O=16, H=1]

Q10) Deduce the molecular formula of the following:

[3]

- (a) Potassium dichromate
- (b) Sodium hypochlorite
- (c) Hydrogen peroxide

Q 11) Balance each of the chemical equations given below:

[4]

- (a) $\text{FeCl}_3 + \text{NH}_4\text{OH} \rightarrow \text{NH}_4\text{Cl} + \text{Fe}(\text{OH})_3$
- (b) $\text{KI} + \text{Cl}_2 \rightarrow \text{KCl} + \text{I}_2$
- (c) $\text{NH}_3 + \text{O}_2 \rightarrow \text{NO} + \text{H}_2\text{O}$
- (d) $\text{PbO} + \text{NH}_3 \rightarrow \text{Pb} + \text{H}_2\text{O} + \text{N}_2$