

UNIT TEST

STANDARD - 11	TOTAL MARKS - 25
SUB - CHEMISTRY	TIME -1 Hr.
CODE – 052	MEDIUM - ENGLISH

SECTION: A

➤ Answer the following question no. 1 to 5 in short.

➤ (Each of 1 mark)

[05]

- 1) How many moles are in 4.4 g of CO₂?
(Molar Mass of CO₂ = 44 u)
- 2) 10°C = °F.
- 3) How many neutrons are in
 $^{52}_{25}\text{X}^{2+}$?
- 4) Which of the following set of quantum number is not possible?
(A) n=3, l=2, m=-1, s=-1/2
(B) n=4, l=2, m=-2, s=+1/2
(C) n=3, l=1, m=2, s=-1/2
(D) n=4, l=1, m=1, s=+1/2
- 5) Write ground state electronic configuration of Cr.

Section – B

➤ Answer the question no. 6 to 8 in brief.

Each of 2 mark.

[06]

- 6) What is the concentration of sugar (C₁₂ H₂₂ O₁₁) in mol L⁻¹ if its 20 g are dissolved in enough water to make a final volume up to 2 L? [Atomic mass : C=14, H=1, O=16 u]

OR

- 6) Calculate the mole fraction of ethanol in solution prepared by dissolving 46 g of ethanol in 90 g of water.
[Molar mass of ethanol = 46 u]
- 7) Calculate wavelength of an electron moving with a velocity of $2.05 \times 10^7 \text{ ms}^{-1}$ [Mass of electron = $9.1 \times 10^{-31} \text{ kg}$]
- 8) State the limitation of Bohr's atomic model.

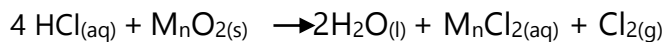
Section – C

- Answer the question no. 9 to 11 in detail.

[09]

[Each of 3 mark]

- 9) Chlorine is prepared in the laboratory by treating MnO_2 with aqueous hydrochloric acid according to reaction



How many grams of HCl react with 5 g of MnO_2 ?

[Atomic Mass : Cl = 35.5 and $Mn = 55$ u]

- 10) State the points of Dalton's atomic theory.

- 11) Yellow Light emitted from a sodium lamp has wavelength (λ) of 580 nm. Calculate the frequency (ν) and wavenumber ($\bar{\nu}$) of the yellow light

OR

- 11) What is the number of photons of light with a wavelength of 4000 pm that provide 1 J of energy?

Section – D

- Answer the following question no. 12 as directed.

[05]

- 12) Explain electronic configuration of He and N according to Pauli and Hund's principle.