

NAME:		ROLL NO:		TIME:	50: MIN
SUB:	Chemistry	Date:		CLASS:	1 st Year
SYLLABUS	Chp. 4 (Stoichiometry)	T. MARKS	30	OBT. M	

Q. 1 Choose the Correct Answer. Cutting, Erasing, Double Selection is Strictly Prohibited. (1x6=6)

- Which one of the following has maximum mass?
(A) 0.5 mol of N₂ (B) 0.5 mol of NH₃ (C) 0.5 mol of He (D) 0.5 mol of CO
- Which of the following represents Avogadro's number?
(A) $6.022 \times 10^{23} \text{ mol}^{-1}$ (B) $6.022 \times 10^{-23} \text{ mol}^{-1}$
(C) $3.011 \times 10^{23} \text{ mol}^{-1}$ (D) $1.008 \times 10^{24} \text{ mol}^{-1}$
- If 2 moles of H₂ react with 1 mole of O₂, what is the limiting reagent?
(A) H₂ (B) O₂ (C) H₂O (D) None
- A sample of nitrogen gas (N₂ molar mass = 28.0 g mol⁻¹) has a mass of 14.0 g. How many nitrogen atoms are present in this sample?
(A) 3.01×10^{23} atoms (B) 6.02×10^{23} atoms
(C) 1.20×10^{24} atoms (D) 2.40×10^{24} atoms
- If a gas has a density of 1.43 g/l at STP, what is its molar mass?
(A) 14.3 g/mol (B) 22.4 g/mol (C) 32.0 g/mol (D) 28.6 g/mol
- The number of molecules in 2 moles of CO₂ is:
(A) 3.01×10^{23} (B) 1.20×10^{24} (C) 6.02×10^{23} (D) 2.00×10^{23}

PART-I

Q. 2 Write Short Answers of the Following Questions (2x8=16)

- Calculate the number of molecules in 0.5 mol O₂.
- Do you think that 1 mole of H₂ and 1 mole of NH₃ at 0°C and 1 atm will have Avogadro's number of particles?
- Calculate the molar mass of CO₂ from its density (1.96 g/L) at STP.
- Define stoichiometry. Give the basic assumptions of stoichiometric calculations.
- Differentiate theoretical and actual yields. How is the percentage yield of a reaction calculated?
- Calculate the theoretical yield of water when 4 g of H₂ react with excess O₂.
- The reaction produced 9 g of product when the theoretical yield was 10 g. calculate percentage yield.
- How is stoichiometry important in medicine dosage?

PART-II

Write Answers of the Following Questions in Detail.

Q. 3 (a) When iron (III) oxide (Fe₂O₃) react with carbon monoxide (CO) in a blast furnace, iron metal (Fe) is produced according to the following equation:



(b) If 1.00 kg of iron (III) oxide is reacted with excess carbon monoxide, and 650 g of iron is obtained, what is the percentage yield of iron? (A_r of O = 16.0, Fe = 55.8) 4



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1ST YEAR REVISION & TEST SESSION



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Answer Key

1	A	2	A	3	D	4	B
5	C	6	B				