CH 101: General Chemistry

Quiz 3 — Stoichiometry & Periodicity

Duration: 30 minutes Maximum marks: 12

SET A

Name: _____ Roll No.: _____

Instructions

- Write your name and roll number before starting.
- This paper has 6 questions in 3 parts, for a total of 12 marks.
- Answer Part C in your answer booklet, not on this paper.

Part A — Multiple Choice

6 marks

Q1. Which of the following are strong acids in water? *(Select all that apply.)* *[2 marks]*

(A) HNO_3
(B) HCl
(C) CH_3COOH
(D) NH_3

Q2. Among the period-3 elements Na, Mg, Al and Si, which has the **largest** atomic radius? *[2 marks]*

(A) Al
(B) Mg
(C) Si
(D) Na

Q3. What is the oxidation state of manganese in $KMnO_4$? *[2 marks]*

(A) +4
(B) −1
(C) +7
(D) +2

Part B — Fill in the Blanks

3 marks

Q4. Balance: _____ $H_2 + O_2 \rightarrow$ _____ H_2O. *[2 marks]*

Q5. One mole contains $6.022 \times 10^{\text{\_\_\_\_}}$ elementary entities. *[1 mark]*

Part C — Short Answer

3 marks

Q6. The Haber process $N_2 + 3H_2 \rightleftarrows 2NH_3$ is exothermic. Using Le Chatelier's principle, predict how (i) raising the temperature and (ii) raising the pressure each shift the equilibrium, with one-line reasons. *[3 marks]*

— End of paper —