

CH 101: General Chemistry
Quiz 3 — Stoichiometry & Periodicity

Duration: 30 minutes Maximum marks: 12

SET B

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.** What is the oxidation state of manganese in KMnO_4 ? *[2 marks]*
- (A) +2
(B) +7
(C) +4
(D) -1
- Q2.** Among the period-3 elements Na, Mg, Al and Si, which has the **largest** atomic radius? *[2 marks]*
- (A) Na
(B) Si
(C) Mg
(D) Al
- Q3.** Which of the following are strong acids in water? (*Select all that apply.*) *[2 marks]*
- (A) HCl
(B) NH_3
(C) HNO_3
(D) CH_3COOH

Part B — Fill in the Blanks

3 marks

- Q4.** Balance: _____ $\text{H}_2 + \text{O}_2 \rightarrow$ _____ H_2O . *[2 marks]*
- Q5.** One mole contains 6.022×10 _____ elementary entities. *[1 mark]*

Part C — Short Answer

3 marks

- Q6.** The Haber process $\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$ is exothermic. Using Le Chatelier's principle, *[3 marks]*
predict how (i) raising the temperature and (ii) raising the pressure each shift the equilibrium, with one-line reasons.

— *End of paper* —