CHEMISTRY-11	Chapter#08 (Complete-Smart Syllabus) Test-4B		
	Name:	Class:	ID:
Date: / /	**Marks Total: 30**	**Marks Obtained:**	
Time Allowed: 50 Min.			

Maximum Marks: 10 **(OBJECTIVE TYPE)** Time Allowed: 10 Min.

NOTE: Tick The Correct Option:

1. **Which statement about the following equilibrium is correct?**

$$2SO_2(g) + O_2(g) \rightleftharpoons 2SO_3(g) \quad \Delta H = -188.3\ kJmol^{-1}$$

(a) The value of K_p falls with rise in temperature.
(b) The value of K_p falls with increasing pressure.
(c) Adding V_2O_5 catalyst increases the equilibrium yield of SO_3.
(d) The value of K_p is equal to K_c.

2. **When 50% reactants in a reversible reaction are converted into product, the value of equilibrium constant K_c is:**
(a) 2 (b) 1 (c) 3 (d) 4

3. **K_c value for the decomposition of HF at 2000°C is:**
(a) 10^{-13} (b) 10^{55} (c) 10^{-20} (d) 10^{-16}

4. **Which aqueous solution has highest pH?**
(a) 0.1 M NaOH (b) 1.0 M H_2SO_4 (c) 0.1 M HCl (d) 0.2 M HNO_3

5. **For which reaction, K_c has no units?**
(a) $PCl_3 \rightleftharpoons PCl_3 + Cl_2$ (b) $N_2O_4 \rightleftharpoons 2NO_2$ (c) $N_2 + 3H_2 \rightleftharpoons 2NH_3$ (d) $N_2 + O_2 \rightleftharpoons 2NO$

6. **The solubility of KI _____ by increase of temperature.**
(a) Increases (b) Decreases (c) Remains same (d) None

7. **The optimum conditions for the industrial preparation of ammonia are:**
(a) P= 400-500 atm, T=400 K (b) P = 200-300 atm, T= 673 K
(c) P= 1000 atm, T=100 K (d) P= 1 atm T= 650°C

8. **The pH of apples is:**
(a) 3.5 (b) 3.1 (c) 4.6 (d) 3.6

9. **At 0°C, the pH of pure water is:**
(a) 7 (b) <7 (c) >7 (d) None

10. **NH_4Cl is added to the solution of NH_4OH to detect the basic radicals of group:**
(a) I (b) III (c) II (d) IV

Maximum Marks: 20 **(SUBJECTIVE TYPE)** Time Allowed: 40 Min.

SECTION-I

Q.2: Give brief answers to the following questions: **(12)**

i. What do you mean by the term active mass?
ii. Derive units of K_c for the system: $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$.
iii. Why does ice melt, when it is pressed or pressure is increased on it?
iv. What conditions are required for the best possible yield of SO_3?

v. Calculate the pH of 10^{-4} mole dm^{-3} of $Ba(OH)_2$ solution.

vi. How can NaCl be purified through common ion effect?

SECTION-II

NOTE: Attempt All Questions: (08)

Q.3: Calculate the pH of buffer solution which 0.11 molar CH_3COONa and 0.09 molar acetic acid solutions are present. K_c for CH_3COOH is 1.85×10^{-5}.

Q.4: Study the equilibrium.

$$H_2O(g) + CO(g) \rightleftharpoons H_2(g) + CO_2(g)$$

a) **Write an expression of K_p.**

b) **When 1.00 mole of steam and 1.00 mole of carbon monoxide are allowed to reach equilibrium, 33.3% of the equilibrium mixture is hydrogen. Calculate the value of K_p. State the units of K_p?**