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| 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?



- (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) $\text{PCl}_3 \rightleftharpoons \text{PCl}_3 + \text{Cl}_2$ (b) $\text{N}_2\text{O}_4 \rightleftharpoons 2\text{NO}_2$ (c) $\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$ (d) $\text{N}_2 + \text{O}_2 \rightleftharpoons 2\text{NO}$
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) $P = 400\text{-}500 \text{ atm}$, $T = 400 \text{ K}$ (b) $P = 200\text{-}300 \text{ atm}$, $T = 673 \text{ K}$
 (c) $P = 1000 \text{ atm}$, $T = 100 \text{ K}$ (d) $P = 1 \text{ atm}$, $T = 650^\circ\text{C}$
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)

- What do you mean by the term active mass?
- Derive units of K_c for the system: $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g})$.
- Why does ice melt, when it is pressed or pressure is increased on it?
- What conditions are required for the best possible yield of SO_3 ?

- v. Calculate the pH of 10^{-4} mole dm^{-3} of $\text{Ba}(\text{OH})_2$ solution.
vi. How can NaCl be purified through common ion effect?

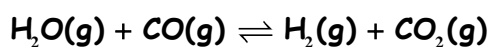
SECTION-II

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.



- 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 ?