Padasalai's Telegram Groups!

(தலைப்பிற்கு கீழே உள்ள லிங்கை கிளிக் செய்து குழுவில் இணையவும்!)

- **Padasalai's NEWS - Group**
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- **Padasalai's Channel - Group**
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- **Lesson Plan - Group**
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- 12th Standard - Group
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- 11th Standard - Group
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- 10th Standard - Group
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- 9th Standard - Group
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- 6th to 8th Standard - Group
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- 1st to 5th Standard - Group
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- TET - Group
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- TNPSC - Group
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SAIVEERA ACADEMY
REVOLUTION FOR LEARNING , COIMBATORE - 8098850809
12TH CHEMISTRY UNIT -8 IONIC EQUILIBRIUM TEST

Marks: 55   **Time:** 1hr 15 min

I.ANSWER THE FOLOWING QUESTIONS   6 × 2 = 12

1. What are the Limitations of Arrhenius concept
2. Identify the conjugate acid base pair for the following HF , H_2SO_4 , NH_3 , HCOOH
3. Define solubility product
4. Define ionic product of water. Give its value at room temperature.
5. Define buffer index
6. Write the expression for solubility product of Hg_2Cl_2

II.Knowledge based questions   5 × 1 = 5

1. The dimethyl ammonium ion , $(CH_3)_2NH_2^+$ is a weak acid and ionizes to a slight degree in water what its conjugate base
2. Arrange the species in order of their increasing basic character: H_2O , OH^- , CH_3OH , CH_3O^-
3. Acetic acid is highly soluble in water but still a weak acid.Why?
4. Will pH of water be same or different at 4 º C or 25ºC ? Explain?
5. How does degree of ionization of weak electrolyte vary with concentration?.What is this law called?

III.ANSWER THE FOLOWING QUESTIONS   6 × 3 = 18

1. Explain common ion effect with an example
2. Discuss the Lowery – Bronsted concept of acids and bases.
3. .Explain buffer action with example
4. Calculate the pH of 0.1M CH_3COOH solution. Dissociation constant of acetic acid is 1.8×10^{-5} .
5. Calculate the pH of a buffer solution consisting of 0.4M CH_3COOH and 0.4M CH_3COONa . What is the change in the pH after adding 0.01 mol of HCl to 500ml of the above buffer solution. Assume that the addition of HCl causes negligible change in the volume. Given: (Ka = 1.8×10^{-5})
6. Calculate i) the hydrolysis constant, ii) degree of hydrolysis and iii) pH of 0.1M CH_3COONa solution (pK_a for CH_3COOH is 4.74).

IV.ANSWER THE FOLOWING QUESTIONS   4 × 5 = 20

1. Derive an expression for Ostwald's dilution law
2. Derive an expression for the hydrolysis constant and degree of hydrolysis of salt of strong acid and weak base
3. .Derive Henderson – Hasselbalch equation for finding out pH of buffer solution
4. Derive an expression for the hydrolysis constant and degree of hydrolysis of salt of weak base and weak acid

FOR MORE QUESTION PAPERS , STUDY MATERIALS , ACADEMIC SUPPORT CONTACT - 8098850809