

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharmacy Sem-III Remedial Examination 2010

Subject code: 230004

Subject Name: Pharmaceutical Analysis-I

Date: 11 /03 /2010

Time: 10.30 am – 01.30 pm

**Instructions:**

**Total Marks: 80**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is hydrolysis? Derive equation for finding pH of aqueous solution of Ammonium Chloride. **06**
- (b) Calculate degree of hydrolysis in 0.1M Sodium acetate.  $K_a=1.8 \times 10^{-5}$ . **05**
- (c) What are functions of Q.A and Q.C. dept in pharmaceutical industry? **05**
- Q.2** (a) Explain theory of acid–base indicator. **06**
- (b) Discuss choice of indicator in the titration of weak base with strong acid. **05**
- (c) 20 ml 0.2N NaOH added to 50 ml 0.12N HCl. Calculate pH of solution? **05**
- Q.3** (a) Write note on Karl Fischer Titration. **06**
- (b) Calculate pH and buffer capacity of solution containing 0.1 M Sodium acetate and 0.1N Acetic Acid.  $K_a$  (Acetic acid) =  $1.8 \times 10^{-5}$ . **05**
- (c) Explain principle of Kjeldahl Method for Nitrogen determination. **05**
- Q.4** (a) What is importance of non-aqueous titration? Discuss ‘Differentiating and leveling effect of solvent. **06**
- (b) Give preparation and standardization of 0.1 N Perchloric acid. **05**
- (c) Write note on “Oxygen combustion flask method”. **05**
- Q.5** (a) Give the reasons **06**
1. Nitrobenzene is used in Volhard’s method of halogen estimation.
  2. Titration involving DMF as solvent give high blank reading.
  3. Ammonium chloride is more acidic ion ethanol than in water.
- (b) A solution is 0.01 M  $MgCl_2$ , 0.01 M  $NH_3$  and 0.20 M  $NH_4Cl$  will Magnesium hydroxide precipitate?  $K_{sp} = 1.1 \times 10^{-11}$ ,  $K_b = 1.8 \times 10^{-5}$ . **05**
- (c) Write note on Nitrite titration. **05**
- Q.6** (a) Explain importance of von-weimarn ratio in gravimetry. Discuss factor affecting purity of precipitate. **06**
- (b) Write note on Fajan’s method of halogen determination. **05**
- (c) Discuss principle involved in the assay of Calcium lactate IP 96. **05**
- Q.7** (a) Discuss the role of pH in the solvent extraction. How mixture of Caffeine and aspirin be separated by solvent extraction? **06**
- (b) 20 ml 0.4% w/v aqueous solution of acetanilide was extracted with three 40 ml Portion of ether. The ether/water partition coefficient for acetanilide is 4.0 Calculate total amount of drug extracted. **05**
- (c) Discuss types and nature of analytical errors? How are they minimized? **05**

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