Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**B. Pharm. – SEMESTER – I • EXAMINATION – SUMMER • 2015**

**Subject Code: 2210003** **Date: 29-05-2015**

**Subject Name: Pharmaceutical Analysis - I**

**Time: 02:30 pm - 05:30 pm** **Total Marks: 80**

**Instructions:**

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

| | | | |
|---|---|---|---|
| **Q.1** | (a) | What is validation? Enumerate the method validation parameters and explain any two in detail. | **06** |
| | (b) | What do you mean by Quality Assurance and Quality Control? Give an importance of Pharmaceutical Analysis. | **05** |
| | (c) | Explain the following terms (Any five)<br>a) Stoichiometric point<br>b) Primary standard<br>c) Common ion effect<br>d) Buffer<br>e) Ostwald ripening<br>f) Tyndal effect | **05** |
| **Q.2** | (a) | Enlist different types of redox titration? Describe Iodine titration in detail? | **06** |
| | (b) | Write a detailed note on end point detection method for redox titration? | **05** |
| | (c) | Theory of Von Weimarn's ratio for relative super saturation to control the precipitation in gravimetric analysis. | **05** |
| **Q.3** | (a) | What is non – aqueous titration? And explain leveling and differentiating effect of solvent with example? | **06** |
| | (b) | Write a note on masking and demasking effect of complexometric titration and give comment on**:** starch paste should be freshly prepared. | **05** |
| | (c) | Write a note on sampling technique & error minimization techniques. | **05** |
| **Q.4** | (a) | Give comment on following (Any Three)<br>i. Phenolphthalein gives colour in basic media.<br>ii. Equivalent weight of $KMnO_4$ is change with media.<br>iii. EDTA is used as a chelating agent in complexometric titrations.<br>iv. Starch indicator should be added toward the end point in iodometric titration. | **06** |
| | (b) | Write is precipitations titration? Write a note on factors affecting precipitations titrations? | **05** |
| | (c) | Write a short note on Volhard's method of precipitation titration? | **05** |

**Q.5** (a) What is complexometric titration? Give the different types of complexometric titration? **06**

(b) Match the following terms: **05**

| **Substances** | **Indicator** |
|---|---|
| 0.1 N HCl | Phenolphthalein |
| Caffeine | Gentian Violet |
| Aspirin | Starch |
| KMnO4 | Self indicator |
| NaCl | Ferric Ammonium Sulphate |
| MgSO4 | Mordant black II |

(c) What is Gravimetric analysis? Explain various steps involved in Gravimetric analysis. **05**

**Q. 6** (a) Differentiate following terms **06**

i. Lewis acid & Lewis base
ii. Ruggedness & Robustness
iii. LOD & LOQ

(b) What is acid base titration? Explain Any two theories of Acid- Base titrations. **05**

(c) 1. How will you prepare 250 ml 0.1 M HCl & 0.1 M NaOH? **05**

2. 100 ml 0.1 N $CH_3COOH$ is titrated with 0.1 N NaOH calculate the pH, Where Ka = $1.8 \times 10^{-5}$
   - At 0 ml addition of titrant
   - At 50 ml addition of titrant

**Q.7** (a) Give a detail account on karl-fisher titration. **06**

(b) Discuss on kjeldahl method. **05**

(c) Derive Henderson-Hasselbach equation **05**

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