



K16U 1209

Reg. No. : .....

Name : .....

**II Semester B.Sc. Degree (CCSS – Reg./Supple/Improv.)**

**Examination, May 2016**

**CORE COURSE IN CHEMISTRY**

**2B03CHE : Analytical Chemistry**

**(2014 Adm. Onwards)**

Time : 3 Hours

Max. Marks : 40

**SECTION – A**

Answer **all** questions. **Each** question carries **one** mark.

1. What are thermometric titrations ?
2. Give any two requisites of a primary standard.
3. What is the basic principle of liquid chromatography ?
4. What is Lux Flood concept of acids and bases ? **(1×4=4)**

**SECTION – B**

Answer **any seven** questions. **Each** question carries **2** marks.

5. What are the factors affecting TGA ?
6. What is basic principle of neutron diffraction ?
7. Explain with example the two types of extraction systems.
8. Write down the various operations involved in TLC.
9. What are redox indicators ? Give examples.
10. Why is it necessary to add  $\text{NH}_4\text{Cl}$  prior to the addition of  $\text{NH}_4\text{OH}$  in third group ?

P.T.O.



11. Which of the following can act as a lewis acid,  $H_2O$ ,  $CaCl_2$ ,  $SO_3$ ,  $OH$ ,  $CO_2$ ,  $Ag^+$  ?
12. Explain conjugate acid and base with examples.
13. The liquid  $NH_3$  solution of phenolphthalein is colourless but becomes red on addition  $NaNH_2$ . Explain.
14. What is principle involved in iodometric titration ? (2×7=14)

### SECTION – C

Answer **any 4** questions. **Each** question carries **3** marks.

15. Explain Batch and Continus extraction.
16. Discuss the Ostwalds theory acid base indicator.
17. What are the optimal conditions for precipitation in gravimetry ?
18. Discuss the factors affecting solvent extraction.
19. What are the applications of HSAB principle ?
20. Explain activation analysis. (3×4=12)

### SECTION – D

Answer **any 2** questions. **Each** question carries **5** marks.

21. Briefly describe the principle working and applications of DTA.
  22. a) Discuss the principle of gas chromatography. 2  
 b) Explain the factors which affect the separation in gas chromatography. 3
  23. Discuss the principles underlying the separation of cations into groups in qualitative analysis.
  24. a) What are the characteristics of a solvent ? 1½  
 b) Give some important reactions carried out in liquid HF. 3½
- (5×2=10)
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