

TM154090A

Reg. No:.....

Name:.....

**M. Sc. DEGREE (C.S.S.) EXAMINATION, MARCH 2017**  
**SEMESTER IV – ELECTIVE COURSE (CHEMISTRY)**  
**CH4E15TM - ANALYTICAL CHEMISTRY**

**Time: Three Hours**

**Maximum Marks: 75**

**PART A**

**I. Answer any five of the following. Each question carries 3 marks**

1. Explain the functioning of a piezoelectric transducer
2. Define COD. How COD is measured?
3. What is Micellar electro kinetic chromatography?
4. What is the principle of Capillary electrochromatography?
5. Write briefly on the advantages of automated analysis?
6. What is discrete automatic sample analysis?
7. Give abrief account on aquatic resources

**(5x3=15)**

**PART B**

**II. Answer six questions of the following. Each question carries 5 marks**

8. What are the different sources of Noise in instrumental analysis? Explain
9. Give a brief account on the application of UV-VIS spectroscopy in quantitative analysis
10. Draw the block diagram and explain the function of various components in IR spectroscopy
11. Discuss microwave decomposition with suitable example
12. Explain the methods for elimination of interference from samples
13. Describe the direct and indirect methods for determination of water in a sample
14. Explain how Sulphur dioxide and Ammonia present in the atmosphere are estimated
15. Explain the principle and applications of electrodialysis
16. Write an account on scale formation and its prevention in distillation process

**(6x5=30)**

**PART C**

**III. Answer any two questions. Each question carries 15 marks**

15. Discuss about the hardware and software methods that are used for enhancing S/N ratio
16. Write an account on application of FTIR spectroscopy in qualitative and quantitative analysis
17. a) Give brief account of decomposition and dissociation of samples with inorganic acids  
b). Write an account on the principle and procedure followed in Multiple Extraction
18. Write a note on
  - a). Capillary isotachopheresis
  - b). Automatic CHN analyzer

**(2x15=30)**