B.Sc. DEGREE EXAMINATION,NOVEMBER 2019
III Year V Semester
Analytical Chemistry - I

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. Write the role of supporting electrolyte in polarography.
2. What is meant by concentration polarisation?
3. Mention the applications of amperometry.
4. Define specific rotation and name the instrument used to measure it.
5. What are thermometric titrations?
6. How many NMR signals are obtained for Acetophenone?
7. Why TMS is used as a reference in proton NMR spectroscopy?
8. What is the significance of coupling constant?
9. Mention the expected m/e values of the fragments in the mass spectrum of chlorobenzene.
10. What is a base peak in mass spectroscopy?
11. Write the various types of computers.
12. Define flow chart.

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. What are the advantages and disadvantages of dropping mercury electrode?
14. Discuss the application of polarography.
15. Explain how glucose is estimated by polarimetry?
16. What are the characteristics of DTA curves and mention the factors that affect it?
17. Write a note on shielding mechanism.
18. Explain the following:
    (i) Nitrogen rule (ii) metastable peak
19. What are variables and escape sequence in C programming?

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Explain the various polarographic currents in detail.
21. Describe the instrumentation of thermogravimetry.
22. a) Sketch the NMR spectrum of ethanol and toluene.
    b) Explain any two characteristics which influences the chemical shift values. (3+3+4)
23. (a)What is the basic principle involved in mass spectrometry?
    (b) Mention the components of mass spectrometer and write their functions.
24. (a) Describe the block diagram of digital computer.
    (b) Write a C program for the determination of pH.

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