



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – FOOD CHEMISTRY AND FOOD PROCESSING

FIRST SEMESTER – NOVEMBER 2017

17/16PFP1MC04 – TECHNIQUES IN FOOD ANALYSIS

Date: 10-11-2017
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

Part A

Answer **ALL** questions

(10 X 2 = 20) marks

1. Tabulate the differences between accuracy and precision.
2. Mention any four methods used to minimize error in analysis.
3. How will you differentiate inter and intra molecular hydrogen bonding using NMR spectroscopy?
4. State Hooks law.
5. Mention any four precautions required in paper chromatography experiment.
6. What are cation exchange resins? Give an example.
7. Mention any three important applications of gel filtration technique in food industries.
8. Write the principle of spectroscopy¹ technique.
9. What are acidic and basic buffers?
10. What is meant by post precipitation in gravimetric analysis?

Part – B

Answer **ANY EIGHT** questions

(8 X 5 = 40) Marks

11. State titrimetric law. What are absolute and relative error in error analysis?
12. What are primary and secondary standard solutions? Mention the important characteristics of primary standard solutions.
13. Write the principle and application of colorimetric method in food analysis.
14. Describe the various types of electronic transitions in UV-Visible spectroscopy.
15. Write a note on Raman scattering and Rayleigh scattering.
16. Discuss the shielding and deshielding effects in NMR.
17. Describe any five important characteristics of adsorbents in column chromatography.
18. Explain the various types of gels used gel chromatographic technique.
19. Discuss the principle, procedure and advantages of ultra centrifugation technique.
20. Write a note on nano filtration and micro filtration.
21. How will you estimate the amount of ferrous ion in a given sample using potentiometric titration?
22. Define chromatography. How is it classified?

Part – C

Answer **ANY FOUR** questions

(4 X 10 = 40) marks

23. Describe various methods used to express precision and accuracy of an analysis.

24. Explain the following terms.

a. Bathochromic shift b. Auxochromes c. Hypochromic shift d. Chromophores

25. a. Write the principle and working technique of thin layer chromatography.

b. Give any three advantages of TLC over paper chromatography (7+3)

26. Discuss the principle, procedure, advantages and disadvantages of isotopic dilution analysis.

27. a. Describe the various factors affecting the efficiency of column in column chromatography.

b. Mention any four important characteristics of detector in gas spectroscopy.

(6+4)

28. a. Discuss the various types of molecular vibrations in IR spectroscopy.

b. Why is TMS used as internal standard in NMR spectroscopy.

(6+4)

\$\$\$\$\$\$\$\$