

**VINAYAKA MISSION'S RESEARCH FOUNDATION
(DEEMED TO BE UNIVERSITY), SALEM**

**B.PHARM. DEGREE EXAMINATION – JANUARY 2020
Seventh Semester**

INSTRUMENTAL METHODS OF ANALYSIS

Time : Three hours

Maximum: 75 marks

I. Write essays on any **TWO** questions: (2 x 10 = 20)

1. Write in detail about the principle, instrumentation and applications of gas chromatography
2. a) Write a detail account on Ion exchange chromatography
b) Write the applications of column chromatography
3. Explain about principle and instrumentation of IR spectrometer

II. Write short answers on any **SEVEN** questions: (7 x 5 = 35)

4. Define quenching. Write the different types of quenching.
5. Write about electronic transitions in UV spectroscopy.
6. Write about different types of vibrations in IR spectroscopy.
7. Describe the components of flame photometry.
8. Write the principle, advantage and applications of TLC.
9. Write about the comparison between TLC and paper chromatography.
10. Write the principle and instrumentation of turbidimetry.
11. Define electrophoresis. Write about gel electrophoresis.
12. Write the theory and applications of affinity chromatography.

III. Write short notes on : (10 x 2 = 20)

13. Define bathochromic and hypsochromic shift.
14. What is triplet state?
15. Define dipole moment.
16. What are R_f, R_x and R_m?
17. Name the source of light used in atomic absorption spectroscopy?
18. What is HETP?.
19. Name the spray reagents used for detection of alkaloids and cardiac glycosides .
20. Define isocratic and gradient elution.
21. Why guard column is used in HPLC?
22. Name any two adsorbents used in TLC.