

Rajiv Gandhi University of Health Sciences, Karnataka

IV Year B.Pharm Degree Examination – Sep 2012

Time: Three Hours

Max. Marks: 70 Marks

INSTRUMENTAL & BIO-MEDICAL ANALYSIS

(Revised Scheme – 3)

Q.P. CODE: 2617

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two)

2 x 10 = 20 Marks

1. Write the construction, working (with electrode equation), merits, demerits and applications for the following electrodes used in Potentiometric titration: a) Glass Electrode b) Standard Calomel Electrode.
2. Emphasize on the ideal characteristics of stationary phases, mobile phases and inert support materials used in Gas liquid chromatography. Add a note on the construction and working of a selective GC Detector useful in analysis of halogenated compounds.
3. Write the principle, equations, excitation and emission wavelength involved in the fluorimetric assay of Thiamine hydrochloride and Riboflavin. Add a note on the need for using two filters in spectrofluorimeters.

SHORT ESSAYS (Answer any Six)

6 x 5 = 30 Marks

4. What is photometric titration? Write any two photometric titration curves giving appropriate examples?
5. Write principle and applications of any four types of acid-base conductometric titrations?
6. Write the working principle of an Atomic absorption spectrometer?
7. Define 'validation'. Explain types of "Process Validation".
8. Demonstrate the technique of two- dimensional paper chromatography. When is this method selected and how is the migration parameter calculated in this technique?
9. Explain the working of any one bulk property detector used in HPLC. Write its merits and demerits?
10. What is the objective of carrying out derivatization in HPLC and GC? Give one example each.
11. Explain the construction and working principle of any two thermal detectors in Infra-red spectrometers.

SHORT ANSWERS

10 x 2 = 20 Marks

12. Write the principle of separation in Gel electrophoresis?
13. What is molar extinction coefficient and absorptivity?
14. Write one example each for synthetic cation and anion exchangers?
15. Write any two stationary phases and mobile phases each, used in HPLC?
16. What is 'Group frequency region' and 'Fingerprint region' in an Infra-red spectrum? Write its importance?
17. What is activation of TLC plate? Give the principle involved in TLC
18. Write the working principle of an Interference filter?
19. What is a theoretical plate? How is the theoretical plate number calculated?
20. What is self quenching? How is it overcome?
21. Write any two applications for flame emission spectroscopy?
