Rajiv Gandhi University of Health Sciences, Karnataka

IV Year B.Pharm Degree Examination – Mar 2013

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. What is "absorption maxima" and "Beer's law concentration range"? How are they determined? Explain the consequences that happen on deviation from the above two criterions in colorimetric analysis.
2. What are the requirements of a conductometric titration? Explain acid-base, complexometric and displacement type of conductometric titrations with suitable titration curves.
3. What is the difference between a chromatograph and a chromatogram? Write the major components of HPLC with emphasis on the stationary and mobile phases used.

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Outline difference between nephelometric and turbidimetric methods. Write any one major application for each of these techniques.
5. Write the methodology used in multi-component analysis using UV spectrometric technique.
6. Describe the principle of obtaining monochromatic radiations with various types of Prism monochromators through neat diagrams
7. What are the sources of quality variation? Write the strategies used to overcome them.
8. Write methods used for sample handling while obtaining infrared spectra of solids and liquids.
9. Write the construction, working and applications of Katharometer.
10. Explaining its importance, describe the process of 'reverse phase chromatography' and 'two-dimensional chromatography'.
11. With suitable titration curves, explain the method to determine end-points in potentiometric titration of strong acid with strong base.

SHORT ANSWERS **10 x 2 = 20 Marks**

12. What is K-band? Give an example.
13. What is thermal detector in IR spectrometer? Write the principle involved in the working of such detectors.
14. Write the electrode equation for a potentiometric electrode system comprising of standard hydrogen electrode and glass electrode while determining the hydrogen ion concentration.
15. Write any two applications of Flame emission spectroscopy.
16. What is R_X in TLC? How and for what, kind of experiments R_X is calculated.
17. Explain the types of stationary phases used in GLC.
18. What is barrier layer cell? Write any two major limitations of using barrier layer cell.
19. What are the reasons for Hypsochromic shift and Bathochromic shift?
20. What is self - quenching? What measures should be, taken to overcome it?
21. What are the applications of using an Electron capture detector?

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