Rajiv Gandhi University of Health Sciences, Karnataka

IV Year B.Pharm Degree Examination – 07-Jan-2020

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 are bonded phase supports? Describe its importance in HPLC. Add a note on different types of pumps and sample injection systems used in HPLC.
2. What are the requirements of a potentiometric titration? Explain any one classical potentiometric titration emphasizing on the electrodes used and methods commonly followed for determination of titration end - point.
3. Explain different development and detection techniques used in paper chromatography.

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

4. Outline differences between flame emission and atomic absorption spectrometric methods. Write any two important applications for each of these techniques.
5. Write the effect of polar and non-polar solvents on absorption spectra of molecules.
6. Describe the principle of obtaining monochromatic radiations using Gratings with a neat diagram.
7. What is process validation? Explain its types.
8. Justify the statement – "Fluorimetric methods are said to be sensitive and selective".
9. What are bulk property HPLC detectors? Explain the construction and working of any one of them.
10. What is column chromatography? Explain the methodology and the principle involved in column chromatographic technique.
11. Explain with suitable titration curves, the method to determine end-points in displacement type of conductometric titrations.

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

12. What is E-band? Give an example.
13. What is the scope of derivatization in gas chromatography? Give an example.
14. Write the electrode equation for a potentiometric electrode system comprising of Calomel electrode and glass electrode in determination of hydrogen ion concentration of the solution.
15. Write any two applications of Nephelo-turbidimetric analysis.
16. What is the HR_f? How and for what, compounds HR_f is calculated.
17. Write the applications of ion-exchange chromatography.
18. What are dynodes in PMT? How is it different from the cathode present in such detectors?
19. What is the difference between frontal analysis and elution analysis?
20. What is concentration quenching and static quenching?
21. Write the composition and types of paper commonly used in paper chromatographic technique.

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