NRJ/KW/17/4264

B.Pharm Second Semester (C.B.S.) Examination

PHARMACEUTICAL ANALYSIS—I

Paper—4

Time : Three Hours] [Maximum Marks : 80

N.B. :— (1) Question No. **1** is compulsory.
(2) Solve any **FOUR** questions from the remaining.
(3) Draw neat labelled diagrams wherever necessary.
(4) Use of electronic calculator is permitted.
(5) Assume suitable data wherever necessary.

1. Answer any **FIVE** of the following :
   (a) Explain why an aqueous solution of sodium chloride is neutral whereas solution of sodium acetate is basic in nature ?
   (b) Comment on the use of acetic anhydride in the preparation of 0.1 M acetous perchloric acid solution.
   (c) Explain why solution of sodium thiosulphate is prepared in freshly boiled and cooled water ?
   (d) Explain why small excess of precipitating agent be added but large excess should be avoided in gravimetric analysis.
   (e) Explain the reasons of indicator color fading at end point in chloride determination by Volhard's method. Suggest the ways to overcome it.
   (f) Explain why complexometric titrations should be performed at suitable pH in properly buffered media.
   (g) What is molarity and normality ? Compare their advantages and drawbacks. 5×4=20
2. (a) Explain the neutralisation curves of different acid-base titrations and suggest suitable indicators for detection of end point. 10
   (b) Describe the principle and procedure of assay of ammonium chloride I.P. 5
3. What are non-aqueous titrations ? Give their advantages and limitations. Explain preparation, standardisation and storage of 0.1 M sodium methoxide solution. 15
4. Explain the theory of internal redox indicators and justify the use of ferroin as suitable indicator in titration of ferrous sulphate with ceric ammonium sulphate on the basis of redox titration curve. 15
5. (a) Discuss the experimental conditions for formation of course crystalline precipitate in gravimetry. How will you minimise the contamination of precipitate ? 8
   (b) Describe a Mohr's method of halide determination and comment on the theoretical and practical concentration of indicator to be used in it. 7
6. (a) What are complexes, chelates and sequestering agents ? Explain why EDTA is considered to be very versatile titrant in complexometry. 7
   (b) Describe various means of improving the selectivity of complexometric titrations. How will you determine the contents of aluminium and magnesium in admixture ? 8
7. Write notes on any **THREE** of the following :
   (a) Non-aqueous titrimetric assay of ephedrine hydrochloride
   (b) Thermogravimetry
   (c) Theory of adsorption indicators
   (d) Accuracy, precision and errors
   (e) Filtration and washing of precipitate in gravimetry. 5×3=15