

FACULTY**B. Pharmacy 2/4 I Semester (Suppl.) Examination, April 2017****Subject : Pharmaceutical Analysis – I (Chemical Analysis)****Time : 3 Hrs****Max. Marks: 70****Note: Answer all questions. All questions carry equal marks.**

- 1 (a) Define primary and secondary standards with suitable examples. (2)
(b) Discuss the ideal requirements of primary standard substances. (6)
(c) Explain the terms specificity, sensitivity and standard deviation. (6)

OR

- (d) Define Normality and molarity. (2)
(e) Explain the calibration of analytical equipment and its importance in pharmaceutical analysis. (12)

- 2 (a) What is Acidimetry and Alkalimetry? (2)
(b) Explain the neutralization curve for a titration between weak and strong base. (8)
(c) Define the following terms:
(i) pH (ii) Buffer solution (iii) Buffer action (iv) Buffer capacity (4)

OR

- (d) Discuss the theory of indicators. (6)
(e) Explain the hydrolysis of salts and write the equations used to calculate the pH of different salt solutions. (8)

- 3 (a) Describe the procedure for preparation and standardization of 0.02 M potassium permanganate. (8)
(b) What are organic precipitants? Explain the use of organic precipitation in gravimetric analysis. (6)

OR

- (c) Describe various types of indicators used in redox titrations. (6)
(d) Discuss the principle and different steps involved in gravimetry. (8)

- 4 (a) Explain the principle involved in non-aqueous titrations and discuss various types of solvents used in non-aqueous titrations. (7)
(b) Discuss the principle and procedure involved in estimation of calcium lactate by complexometry. (7)

OR

- (c) Discuss the principles of volumetric analysis. (8)
(d) Write a note on complexometric indicators. (6)

- 5 (a) Describe the mole concept and Avogadro's number. (6)
(b) Explain the stoichiometry of ionic equations with suitable examples. (4)
(c) How do you calculate theoretical yield and percentage yield? Explain with an example. (4)

OR

- (d) Balance the following chemical equations: (8)
(i) $\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + \text{H}_2\text{O}$
(ii) $\text{BaCl}_2 + \text{NaOH} \rightarrow \text{Ba(OH)}_2 + \text{NaCl}$
(iii) $\text{H}_2\text{SO}_4 + \text{FeCl}_3 \rightarrow \text{Fe(SO}_4)_3 + \text{HCl}$
(iv) $\text{Na}_2\text{SO}_3 + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{SO}_3$
(e) Define the terms empirical formula, molecular formula and percentage composition. (6)
