P. G. D. S. A. I. T. P. I. (Sem. I) (CBCS) Examination
April / May - 2018
PGDI - 101 : Basic Concept of Pharma & Chemical Analysis
(New Course)
Faculty Code : 003
Subject Code : 028105

Time : $2\frac{1}{2}$ Hours]   [Total Marks : **70**

Instructions : (1) All questions are compulsory.
(2) All questions carry equal Marks.

1   Answer the following questions : (any **seven**)   **14**
   (a) Explain specific rotation and optical activity.
   (b) How will you prepare $0.5\,M\,H_2SO_4$ solution ?
   (c) Define : pH, pKa, pOH, and pKb.
   (d) What is Volumetric analysis, equivalence point and end point ?
   (e) Name the indicators used in neutralization, precipitation and redox titration.
   (f) Give the difference between co-precipitation and precipitation.
   (g) Define redox titration and give its applications.
   (h) Give the comparison of chemical and instrumental method of analysis.
   (i) Mention the characteristics of primary and secondary standard compounds. Give three name of compounds of each.
   (j) Explain accuracy and precession.

2   Answer the following questions : (any **three**)   **14**
   (a) Derive hypthetical pH titration curve for strong acid and strong base with suitable example and interpreat the pH Scale.
   (b) Explain the theory of polarimetry and define ORD and CD.
   (c) Explain Volhard method with suitable example.
   (d) How will you prepare $0.1\,M\,NaOH$, $0.1\,N\,K_2Cr_2O_7$ and $0.1\,N\,Na_2CO_3$ solutions ?

3 Answer the following questions : 14

(a) Give the types of Glasswares cleaning process and write note on cleaning agent.

(b) Discuss the theory of complexometric titration. Give the role of masking and demasking agents in complexometric titration.

OR

3 (a) Describe the different methods of glassware calibration.

(b) Explain Arrhenius, Bronsted-Lowry and Lewis acid - base concept with suitable example. Briefly explain indicator error.

4 Answer the following questions : (any **two**) 14

(a) Write note on :

(i) GC lab hazards and precautions

(ii) Synthetic lab hazards and precautions.

(b) Draw the block diagram of polarimeter and discuss the functioning of it. Explain cotton effect.

(c) Discuss significant figure and t-test. Mention the limits of analytical method.

5 Answer the following questions : (any **two**) 14

(a) (i) Give the classification of errors. How will you reduce systematic errors ?

(ii) Define : Mean, Standard Deviation, Median.

(b) Write note on Q-test and F-test. Define linear regression and confidence limit.

(c) Discuss the theory of redox titration. How will you detect end point in redox titration ?

(d) Describe Fajan's method and name of adsorption indicators used in precipitation titration.

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