HDU-003-028105 Seat No. _____

P.G.D.S.A.I.T.P.I. (CBCS) (Sem. I) Examination

November / December – 2017

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 : (any seven)

(a) How will you prepare 5 MHCl solution in 100 ml ?

(b) Give the comparison of chemical method and instrumental method of analysis.

(c) Differentiate : Co-precipitation and Precipitation.

(d) Define complexometric titration and give its applications.

(e) Give the characteristics of primary and secondary standard. Also mention three name of each.

(f) Define accuracy and precession.

(g) Explain specific rotation and optical activity.

(h) Define : P^H , P^{OH} , P^{ka} , P^{kb} .

(i) Name the indicators used in Volhard's and Mohr's method. Draw the structure of fluorescein.

(j) Define volumetric analysis and equivalence point.

2 Answer the following : (any three)

(a) What is argentometric titration ? Explain in detail with suitable example.

(b) Give the theory of polarimetry and explain the term ORD and CD.

(c) Derive hypothetical pH titration curve for strong acid and weak base with suitable example. Interpreat the pH scale.

(d) How will you prepare 0.1M and 0.1N iodine solution ? Differentiate iodimetry and iodometry.

3 Answer the following :

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

(ii) Define : Mean, standard deviation, coefficient of variance, median.

(b) Discuss the theory of redox titration curve. How will you detect and point in redox titration ?

OR

(a) Explain Arrhenius, Bronsted-Lowry and Lewis acid-base concept with suitable example. Discuss briefly indicator error.

(b) Discuss the role of masking and demasking agents in complexometric titration ? Calculate the conditional constants for the formation of EDTA complex of Fe^{2+} at P^H of

(i) 6.0

(ii) 8.0 and

(iii) 10.0

4 Answer the following : (any two)

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

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

(c) Describe different methods of glassware calibration.

5 Answer the following : (any two)

(a) Write note on :

(i) GC lab hazards and precautions.

(ii) Synthetic lab hazard and precautions.

(b) Describe Fajan's method and name the adsorption indicators used in precipitation titration. Give the structure of Eosin.

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

(d) Give the types of glasswares cleaning process and write note on cleaning agent.

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