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PY 132203

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2019

B.Pharm. 2nd Semester End-Term Examination

PHARMACEUTICAL ANALYSIS – I

(Old Regulation)

Full Marks – 100

Time – Three hours

The figures in the margin indicate full marks
for the questions.

1. Answer the following questions : (10 × 1 = 10)
- (i) The analysis of sample for quantities in the range 0.1g or more is called
- (a) Submicro analysis
 - (b) Trace analysis
 - (c) Meso analysis
 - (d) Macro analysis
- (ii) In KMnO_4 the oxidation state of Mn is
- (a) +7
 - (b) -7
 - (c) -8
 - (d) +1

[Turn over

- (iii) The primary standard used for the standardization of 0.1M ceric ammonium sulphate is
- (a) Oxalic acid
 - (b) Potassium permanganate
 - (c) Arsenic trioxide
 - (d) None of the above
- (iv) Which of the following is the adsorption indicator used in Fagan's method
- (a) Methyl Blue
 - (b) Phenol red
 - (c) Potassium iodide
 - (d) Rhodamine
- (v) The pK_s value of water is
- (a) 19.1
 - (b) 14.45
 - (c) 26.5
 - (d) None of the above
- (vi) _____ pipettes have fixed or variable volume and are usually employed for dispensing large number of identical volumes very quickly.
- (vii) A _____ is a covered glass container designed for the storage of objects in a dry atmosphere.

- (viii) In titrimetric analysis the reagent of known concentration is called _____ and the substance being titrated is termed _____.
- (ix) A platinum Gooch crucible containing mat is also called _____.
- (x) By suitably mixing certain indicators the color change may be made to extend over a considerable portion of the pH range called _____ indicator.

2. Answer any *six* question :

- (a) Write about the various concept of acid and base. Derive Handerson-Hasselbach equation for weak acid and weak base. Discuss the law of mass action. Define Buffer solution and explain its mechanism. (3+5+3+4=15)
- (b) Define oxidation, reduction, oxidizing agent and reducing agent. Discuss the Ion-electron balance method of oxidation-reduction reaction. Write about various indicator used in redox titration. Define oxidation number. Write the rules of determining the oxidation number. (3+5+3+1+3=15)
- (c) Write short note on Mohr's and Fajan's method of precipitation titration. Explain the term fractional precipitation. Calculate the solubility product of $MgCO_3$ if 1 litre of its saturated solution contains 0.5333 g of $MgCO_3$ at $20^\circ C$. (molecular weight of $MgCO_3$ is 84.32). (9+3+3=15)

- (d) Define accuracy and precision with example. Explain the classification of errors. Write about the steps to reduce the systemic errors. What are significant figures and write the rules for determining significant figures. (3+3+5+4=15)
- (e) Differentiate between lyophilic and lyophobic colloids. Define post precipitation and co-precipitation. Discuss in details the various types of co-precipitation techniques in gravimetry. (3+2+10=15)
- (f) Write short note on :
- (i) Permanganometry
 - (ii) Iodimetry and iodometry
 - (iii) Common ion effect. (5+5+5=15)
- (g) Explain the steps involved in the operation of gravimetric analysis. Define redox potential. Write about the various theories of acid base indicator. (8+2+5=15)
- (h) Explain the different methods of expressing concentration. Write the significance of rider in analytical balance. Point out the significance of quantitative analysis in quality control. Discuss amphoteric nature of water. (4+3+4+4=15)