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BP 102 T

Roll No. of candidate

2019

B.Pharm. 1st Semester End-Term Examination

PHARMACEUTICAL ANALYSIS – I (Theory)

(New Regulation)

(W.e.f. 2017 – 2018)

Full Marks – 75   Time – Three hours

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

1.   Answer the following :

(20 × 1 = 20)

(i)   Titrimetry involves

(a)   Neutralization Reaction

(b)   Precipitation reaction

(c)   Oxidation Reaction

(d)   All of the above

(ii)   Random errors are also called as

(a)   Determinate error

(b)   Indeterminate error

(c)   Gross error

(d)   None

[Turn over

(iii) In 0.02758 the significant figures are:

    (a) 3

    (b) 4

    (c) 5

    (d) 6

(iv) In Gravimetric analysis the constituent to be estimated is separated in the form of

    (a) Insoluble compound of known composition

    (b) Insoluble compound of unknown composition

    (c) Soluble compound of known composition

    (d) Soluble compound of unknown composition

(v) Variance is the square of

    (a) Mean Deviation

    (b) Standard Deviation

    (c) Absolute error

    (d) Accuracy

(vi) Substance which produces hydroxide ions in solution is a definition of which of the following?

    (a) An Arrhenius acid

    (b) An Arrhenius base

    (c) Bronsted-Lowry acid

    (d) Bronsted-Lowry base

(vii) Following colour is obtained on adding methyl red to an alkali

    (a)   Yellow

    (b)   Red

    (c)   Pink

    (d)   Violet

(viii) Oxidation State of S in Na_2SO_3

    (a)   +2

    (b)   +4

    (c)   +3

    (d)   +6

(ix) Ce (IV) salts are used as an oxidizing agent in:

    (a)   Acidic medium

    (b)   Alkaline medium

    (c)   Neutral medium

    (d)   None

(x) Solubility product of the ppt.formed must be:

    (a)   High

    (b)   Low

    (c)   Zero

    (d)   It does not have any effect

(xi) Brick red precipitate formed in Mohr's method is due to the formation of :

    (a)   Silver nitrate

    (b)   Silver Chromate

    (c)   Silver Chloride

    (d)   Silver thiocyanate

(xii) Pure water is generally not used for washing precipitates because:

    (a)   It is not a good solvent

    (b)   It is neutral

    (c)   Some of the precipitates can go into solution due to peptisation

    (d)   None

(xiii) DMG gives precipitates in:

    (a)   Neutral medium

    (b)   Acidic medium

    (c)   Alkaline medium

    (d)   None of the above

(xiv) Which one is useful in non aqueous titration?

    (a)   Leveling solvent

    (b)   Differentiating solvent

    (c)   Both

    (d)   None

(xv) In polarographic cell when potential is applied, oxygen is reduced at —— when KCl is present.

    (a)   Anode

    (b)   Cathode

    (c)   Electrolyte

    (d)   Both the electrode

(xvi) "The current is not zero when no ions are present", this is for

    (a)   Residual current

    (b)   Migration current

    (c)   Diffusion current

    (d)   Kinetic current

(xvii) Water may interfere with non aqueous titration by

    (a) Acting as strong acid than the weakly acidic drug

    (b) Acting as strong base than the weakly basic drug

    (c) Both

    (d) None

(xviii) Polarography is used for the determination of

    (a) Dissolve Oxygen

    (b) Hardness of water

    (c) Inorganic compound

    (d) None of these

(xix) The process by which a substance without physical separation is so transformed that it does not enter a particular reaction is called

    (a) Masking

    (b) Demasking

    (c) Sequestering

    (d) Kinetic masking

(xx) Which of the following ligands are polydentate?

    (a) $CN-$

    (b) EDTA

    (c) CO

    (d) NH_3

2. Answer the following: (Any seven) $(7 \times 5 = 35)$

(a) What are buffer solutions? Give the mathematical derivation of Henderson-Hesselbach equation. $(1 + 4 = 5)$

(b) What is Thermograviometry Curve? Explain the thermal decomposition of Copper Sulphate Pentahydrate. $(1 + 4 = 5)$

(c) Enumerate the different techniques of quantitative analysis. Discuss the advantage and disadvantages of quantitative analysis over qualitative analysis. $(2 + 3 = 5)$

(d) What is the difference between co–precipitation and post–precipitation? Write short notes on organic precipitants. $(3 + 2 = 5)$

(e) What is non–aqueous titration? Explain the role of solvents used in non–aqueous titration. $(1 + 4 = 5)$

(f) Explain the conductometric method used to determine the end point of strong acid and weak base. (5)

(g) What is Ilkovic equation? Explain the working principle and construction of Dropping mercury electrode. $(1 + 4 = 5)$

(h) What are significant figures? Explain the rules retaining for significant digits. $(2 + 3 = 5)$

(i) Write short notes on : $(3 + 2 = 5)$

    (i) Hydrolysis of salt

    (ii) Law of mass action

3. Answer the following: (Any two): $(2 \times 10 = 20)$

(a) Explain the basic mechanism of complexation. Discuss the various types of complexometric titration. Draw the complexometric titration curve and label its various regions.

$(2 + 4 + 4 = 10)$

(b) Describe the principle and procedure involved in the Voihard's method of titration with suitable example.

(c) What is standard deviation? Calculate the standard deviation and coefficient of variance for an element whose percentage in a sample were found to be 20.8%, 216.6%, 22.1%, 22.0%, 23.3%, 21.9% and 22.8%. $(2 + 8 = 10)$

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