BRAINWARE UNIVERSITY

Term End Examination 2019 – 20

Programme – Bachelor of Pharmacy

Course Name – Pharmaceutical Analysis I

Course Code – BP102T

(Semester – 1)

Time allotted: 3 Hours **Full Marks: 75**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group –A

(Multiple Choice Type Question) 20 x 1 = 20

1. Answer all the questions

(i) Molarity is expressed as

a. Number of moles of solute in 1000 ml of solvent.
b. Number of moles of solute in 1000 ml of solution.
c. Number of equivalent weights of solute in 1000 ml solution.
d. None of the above.

(ii) How many significant figures are there in 1.6750?

a. five
b. four
c. three
d. six

(iii) Which of the following is an analytical separation method?

a. Polarimetry
b. Coulometry
c. Liquid chromatography
d. Refractometry

(iv) The equivalent weight of oxalic acid is:

a. 63
b. 55
c. 45
d. 100

(v) An acid turns blue litmus paper _____

a. Red
b. Yellow
c. Violet
d. Pink

(vi) Gutzeit apparatus is used in the limit test of _____

a. Lead
b. Sulphate

c. Iron
d. Arsenic

(vii) Potassium permanganate is used in

a. Non aqueous titration
b. Redox titration
c. Acid base titration
d. Argentometric titration

(viii) Non aqueous titration is carried out for

a. water insoluble drugs
b. weakly acidic drugs
c. weakly basic drugs
d. all of the above

(ix) Protophilic solvent is

a. sodium hydroxide
b. lithium hydroxide
c. potassium hydroxide
d. all of the above

(x) In acidic solution the colour of phenolphthalein is

a. pink
b. colorless
c. blue
d. yellow

(xi) The titrant used in Permagnatometry is

a. $KMnO_4$
b. KBr
c. I_2
d. $K_2Cr_2O_7$

(xii) The titrant used in Dichromatometry is

a. Potassium dichromate
b. Potassium bromide
c. Potassium chloride
d. Potassium bromate

(xiii) The titrant used in Bromatometry is

a. Potassium bromide
b. Potassium bromate
c. Both a and b
d. None of the above

(xiv) pH and pOH add upto

a. 14
b. 7
c. 8
d. 2

(xv) The unit of conductance is _____

a. Ohm^{-1}
b. Mho
c. Siemen
d. All of the above

(xvi) Adsorption indicators are used in _____

a. Gay-Lussac method
b. Mohr's method
c. Fajan's method
d. Volhard's Method

(xvii) Metal indicator is used in

a. Non-aqueous titration
b. Acid -base titration
c. Complexometric titration
d. Potentiometric titration

(xviii) Potassium chromate (K_2CrO_4) is used as an indicator in_____

a. Mohr's method
b. Volhard's method
c. Fajan's method
d. None

(xix) What is the range of colour change of methyl orange?

a. 4.2 - 6.3 b. 8.3 - 10

c. 2.9 - 4.6 d. none of these

(xx) Blank determination is done by omitting

a. solvent b. reagent

c. unknown compound d. all of these

Group – B

(Short Answer Type Questions) 7 x 5 = 35

Answer any *seven* from the following

2. Derive the Henderson Hasselbatch equation. 5

3. What is conductivity water and how it is prepared? 5

4. Write a short note on different kind of errors and ways to minimize them. 5

5. Write short notes on protophilic and amphiprotic solvents. 5

6. Explain Quinonoid theory of indicators in acid base titration. 5

7. What is the pH of a buffer with 0.7 M of CH_3COOH and 0.6 M of CH_3COONa? K_a for acetic acid is 1.8×10^{-5}. 5

8. Describe the method for preparation and standardization of 0.1N oxalic acid solution. 5

9. Explain Werner's Co-ordination number. What are complexes and chelates? 2+3

10. Write down the advantages of Gravimetric method. What are the applications of Gravimetric method? 2.5+2.5

Group – C

(Long Answer Type Questions) 2 x 10 = 20

Answer any *two* from the following

11.. (a) Write about redox indicators. 4

(b) Explain Fajan's method of Argentometric titration. 6

12. Write about the different sources of impurities in Pharmaceutical substances. 10

13. (a) Explain different types of Complexometric titration. 5

(b) Write a note on complexometric titration curve. 2.5

(c) Explain masking and demasking phenomenon. 2.5
