

**PARUL UNIVERSITY**  
**FACULTY OF PHARMACY**  
**B. Pharm. Winter 2017 - 18 Examination**

Semester: 1

Subject Code: BP102T

Subject Name: Pharmaceutical Analysis I – Theory

Date: 10-01-2018

Time: 10.00 am to 1.00 pm

Total Marks: 75

**Instructions:**

1. Figures to the right indicate maximum marks.
2. Make suitable assumptions wherever necessary.

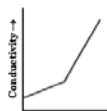
**Q.1 Multiple Choice Questions (MCQs) (1 Mark Each)****(20)**

1. Which of the following is used as an indicator for non aqueous titration?
  - a) Crystal violate
  - b) Bromothymol blue
  - c) Phenolphthalien
  - d) Eriochrome black
2. The glass membrane electrode is responsive to\_\_\_\_
  - (a)  $Mg^{+2}$
  - b)  $H^+$
  - (c)  $Na^+$
  - d)  $Ca^{+2}$
3. Which of the following can be used as counter electrode in Polarography?
  - a) Platinum wire
  - b) Copper wire
  - c) Pool of Mercury
  - d) a and c both
4. Which of the following is a Strong Electrolytes?
  - a)  $H_2CO_3$
  - b) NaCl
  - c)  $NH_3$
  - d) HCN
5. Assay of Calcium Gluconate is which type of titration?
  - a) Acid-base
  - b) Complexometry
  - c) Precipitation
  - d) Redox
6. Which of the following conductometric titration curve indicates titration of strong acid versus strong base?

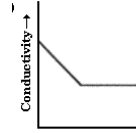
a)



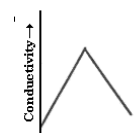
b)



c)



d)



7. Which of the following condition justify precipitation of solute?
  - a)  $I_p = K_{SP}$
  - b)  $I_p < K_{SP}$
  - c)  $I_p > K_{SP}$
  - d) None
8. Which of the following is a Primary Standard?
  - a)  $KMnO_4$
  - b)  $I_2$
  - c)  $K_2Cr_2O_7$
  - d) KI
9. Primary standard must be \_\_\_\_
  - a) pure
  - b) non hygroscopic
  - c) a & b
  - d) none
10. Which of the following is aprotic solvent?
  - a) Water
  - b) Anhydrous Acetic acid.
  - c) Dioxane
  - d) Perchloric acid
11. Particles which move towards **anode** are called
  - a) Photon
  - b) Cation
  - c) Anion
  - d) Positron
12. Which of the following current is proportional to concentration of analyte in solution in polarography?
  - a) Migration Current
  - b) Diffusion current
  - c) Convection current
  - d) Residual current
13. Conductivity of ion in solution increases with
  - a) Increase in size
  - b) Increase in mobility
  - c) a and b both
  - d) none

14. Which of the following is not a reference electrode?  
a) Calomel electrode   b) Glass membrane electrode  
c) Standard hydrogen electrode   d) Silver- silver chloride electrode
15. Which of the following indicator is used in titration involving strong acid and strong base?  
a) Methyl red   b) Starch solution  
c) Phenolphthalein   d) Methyl orange
16. Weight equivalent to mol.wt is dissolved in 1 litre of solvent is...  
a) 1 molar solution   b) 1 normal solution  
c) 1 molal solution   d) None
17. In Limit test of Sulphate \_\_\_\_\_ reagent is used.  
a) Barium chloride   b) HNO<sub>3</sub>  
c) NaNO<sub>3</sub>   d) AgNO<sub>3</sub>
18. Which figure indicates figure between 10.5 and 10.7?  
a) 10.50   b) 10.6  
c) 10.60   d) 10.06
19. Instrumental error is which type of error?  
a) Systematic   b) Random  
c) a & b   d) none
20. Gravimetric titration is which type of analytical method?  
a) Instrumental   b) Classical  
c) a & b   d) None

**Q.2 Long Answers (any 2 out of 3) (10 Mark Each)**

**(20)**

1. Explain Accuracy and Precision.
2. What are buffers? Derive Henderson Hesselbach equation for calculation of pH for buffer solution.
3. What are different end point detection methods in precipitation titration? Explain any two in detail.

**Q.3 Short Answers (any 7 out of 9) (5 Mark Each)**

**(35)**

1. Classify Analytical techniques. Describe each in brief.
2. What is limit test? Explain principle of limit test of chloride.
3. Explain Iodometric and Iodimetric titration.
4. What are Masking and Demasking agents?
5. Explain Dropping mercury electrode.
6. Explain conductometric titration involving a mixture of strong acid and weak acid with a strong base.
7. Explain design and working of Glass membrane electrode
8. Explain briefly steps involved in gravimetric analysis.
9. Write a short note on titration with Potassium Iodate.