

PARUL UNIVERSITY
FACULTY OF PHARMACY
B. Pharm. Winter 2019 - 20 Examination

Semester: 1

Subject Code: BP102T

Subject Name: Pharmaceutical Analysis 1 -Theory

Date: 05/12/2019

Time: 10:00 am to 01:00 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 explains reduction reaction?

| | |
|----------------------------------|-----------------------|
| (a) Gain of Hydrogen | (b) Release of Oxygen |
| (c) Decrease in Oxidation number | (d) All of above |
2. Which the following compounds can be analyzed using Turbidimetric method of Analysis?

| | |
|------------------------------|-------------------------|
| a) Anti Arithmetic agents | b) Anti microbial agent |
| c) Anti Hyperglycemic agents | d) NSAIDs |
3. According to which theory indicators are either weak acid or weak bases?

| | |
|-------------------|---------------------|
| a) Quinoid theory | b) Ostwald's theory |
| c) Both | d) None |
4. $\text{Cr}_2\text{O}_7^{2-} + 6\text{Fe}^{2+} + 14\text{H}^+ = 2\text{Cr}^{3+} + 6\text{Fe}^{3+} + 7\text{H}_2\text{O}$
 Considering above mention reation find out normality of 0.23 M $\text{K}_2\text{Cr}_2\text{O}_7$.

| | |
|----------------|----------------|
| a) 1.15 Normal | b) 0.23 Normal |
| c) 1.38 Normal | d) 1.70 Normal |
5. Which of the following is Metal ion indicator?

| | |
|---------------------|---------------------|
| a) Xylidine Ponceau | b) Crystal Violet |
| c) Methyle Orange | d) Mordant Black II |
6. What type of titration is involved in Mohr's method?

| | |
|---------------------|--------------------------|
| a) Direct titration | b) Replacement titration |
| c) Back titration | d) Indirect titration |
7. Which of the following condition justify precipitation?

| | |
|----------------------|----------------------------|
| a) $K_{SP} < K_{IP}$ | b) $K_{SP} = K_{IP}$ |
| c) $K_{SP} > K_{IP}$ | d) $K_{SP} \approx K_{IP}$ |
8. What compounds can be used as titrant in Alkalimetry types of Non Aqueous titration?

| | |
|--------------------|---------------------|
| a) Acetic acid | b) Sodium Methoxide |
| c) Perchloric acid | d) Sodium Hydroxide |
9. Which of the following Limit test is based on complexation reaction?

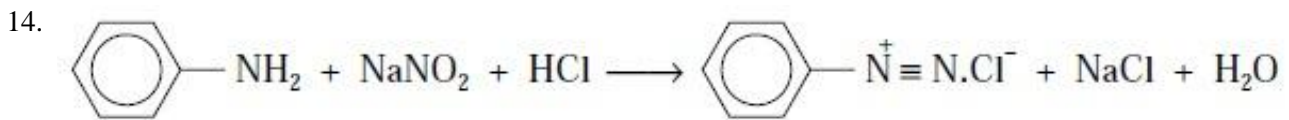
| | |
|------------------|--------------|
| (a) Iron | (b) Chloride |
| (c) Heavy metals | (d) Sulphate |
10. Which of the following text is responsible for the quality control and assurance of Pharmaceuticals in India?

| | |
|-----------------|-------------------------|
| a) Indian Drugs | b) Pharma India |
| c) ICMR | d) Indian Pharmacopoeia |
11. Which is a conjugated acid from following?

| | |
|--------------------|-----------------------------|
| (a) HCl | (b) HONH_3^+ |
| (c) OCI^- | (d) H_2CO_3 |
12. Which of the following is used in standardization of NaOH?

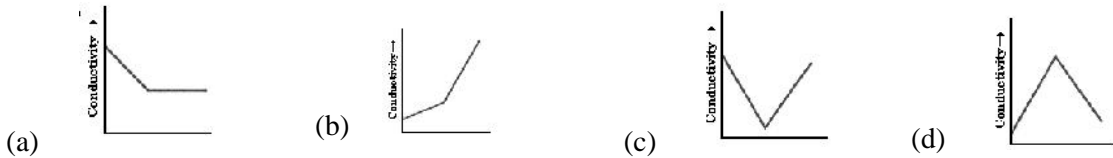
| | |
|-----------------------------|--------------------------------------|
| a) KHP | b) Oxalic acid |
| c) Na_2CO_3 | d) $\text{K}_2\text{Cr}_2\text{O}_7$ |
13. In Which of the following cell no external current is applied

| | |
|------------------------|-------------------------|
| a) Electrolytic cell | b) Electrochemical cell |
| c) Conductometric cell | d) All of above |



Identify titration involving above mentioned reaction.

- a) Non Aqueous titration
 b) Diazotisation titration
 c) Complexometric titration
 d) None
15. Particles which move towards anode are called
 a) Anions
 b) Cation
 c) Photon
 d) Positron
16. Which of the following conductometric titration curve indicates titration of strong acid versus strong base?



17. Aqueous solutions of permanganate are thermodynamically unstable due to
 a) It gets precipitated in water
 b) It oxidizes water
 c) It imparts colour to solution
 d) none of above
18. Which of the following is strong electrolyte?
 (a) H_2CO_3
 (b) HCN
 (c) HCl
 (d) NH_3
19. Hardness of water can be estimated by
 a) Redox titration
 b) Complexometric titration
 c) Argentometric drugs
 d) Non Aqueous titration
20. Identify significant numbers in number 0.007041
 a) 1
 b) 6
 c) 7
 d) 4

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

(20)

1. Enlist different end point detection methods in precipitation titration and explain any two in detail.
2. Explain principal of conductometric titration and Explain conductometric titration of
 - i) 0.1M CH_3COOH with 0.1M NaOH
 - ii) Mixture of 0.1M HCl and 0.1M CH_3COOH with 0.1M NaOH with conductogram.
3. What is neutralization titration? Explain theories of acid base indicators, equivalence point and end point.

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

(35)

1. What is principle of Polarography? Explain Ilkovic equation.
2. Write a note on Accuracy and precision.
3. Write in detail about Glass membrane electrode with schematic diagram
4. Explain Analysis of mixtures with reference to Complexometric titration.
5. What are different methods of expressing concentration?
6. Explain titration involving Iodine.
7. Explain solvents used in non aqueous titration.
8. Write a note on purity of precipitate with reference to Gravimetry.
9. Explain indicators used in redox titration.