

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,  
LONERE – RAIGAD -402 103  
End Semester Examination – December - 2017**

**Branch: B.Pharm**

**Semester: I**

**Subject with Subject Code: Pharmaceutical Analysis - I  
(BP102T)**

**Marks: 75**

**Date: 20 / 12 / 2017**

**Time: 3 Hrs.**

**Instructions:-** 1] All Questions are compulsory.  
2] Figures/ structures to the right indicate full marks.

**Que. No. 1 Attempt the following multiple choice questions. (20 x 1 = 20)**

- (a) Which of the following is a property of acid?
- |                              |              |
|------------------------------|--------------|
| a) Sour                      | b) Corrosive |
| c) Change litmus blue to red | d) All       |
- (b) Gram \_\_\_\_\_ of solute dissolved in one liter of solvent gives 1 Normal solution.
- |                      |                     |
|----------------------|---------------------|
| a) Equivalent weight | b) Molecular weight |
| c) Formula weight    | d) Mole             |
- (c) Silver ions titrated with std. solution of thiocyanate ion is called as \_\_\_\_\_ method
- |           |              |
|-----------|--------------|
| a) Mohr's | b) Volhard's |
| c) Fajans | d) None      |
- (d) The assay of \_\_\_\_\_ is performed by non aqueous titration
- |                            |                    |
|----------------------------|--------------------|
| a) Magnesium sulphate      | b) Barium sulphate |
| c) Ephedrine hydrochloride | d) Benzoic acid    |
- (e) A drop of mercury in DME acts as \_\_\_\_\_.
- |                        |                        |
|------------------------|------------------------|
| a) Reference electrode | b) Indicator electrode |
| c) Hydrogen electrode  | d) Calomel electrode.  |
- (f) % w/v mean
- |  |
|--|
| a) Number of ml of solute in 100 gm of product.  |
| b) Number of ml of solute in 100 ml of product.  |
| c) Number of gm of solute in 100 ml of product.  |
| d) Number of gm of solute in 1000 ml of product. |
- (g) Iodometry refers to titration which deals with \_\_\_\_\_.
- |                                 |                         |
|---------------------------------|-------------------------|
| a) Standard solution of iodine  | b) Liberation of iodine |
| c) Evolution of CO <sub>2</sub> | d) Starch solution      |

- (h) Indicator used in non-aqueous acid base titration is \_\_\_\_\_.
- a) Starch  
b) Mordant black-III  
c)  $\text{KMnO}_4$   
d) Crystal violet
- (i) Formation of colored compounds at the end point in Precipitation titration is a characteristic of \_\_\_\_\_ method.
- a) Mohr's  
b) Fajans  
c) Gay-Lussac's  
d) Volhard's
- (j) Purpose of masking and demasking agents is employed to \_\_\_\_\_.
- a) Estimate Metal  
b) Heavy metals  
c) Estimate Metal complexes  
d) All
- (k) PPM mean \_\_\_\_\_.
- a) Percent per millions  
b) percent parts million  
c) percent purity in millions  
d) parts per million
- (l) According to \_\_\_\_\_ theory acid is an electron acceptor
- a) Arrhenius theory  
b) Lewis theory  
c) Ostwalds theory  
d) lorry Bronsted theory
- (m) Color of Phenolphthalein in alkaline pH is \_\_\_\_\_.
- a) Red  
b) Pink  
c) Yellow  
d) Colorless
- (n) The indicator employed in Volhards methods is \_\_\_\_\_.
- a) Ferric nitrate  
b) Ferroin  
c) Crystal violet  
d) None
- (o) Following is not reference electrode.
- a) Std. Hydrogen electrode  
b) Calomel electrode  
c) Quinhydrone electrode  
d) Silver-silver chloride electrode
- (p) Ceric sulphate used as oxidizing agent is often termed as .....
- a) Gravimetry  
b) Permanganatometry  
c) Ceriometry  
d) None
- (q) \_\_\_\_\_ is popular redox self indicator employed in Redox Titrations.
- a)  $\text{KMnO}_4$   
b) Ferroin  
c) Starch  
d) None of above
- (r) DME stands for \_\_\_\_\_ electrode.
- a) Diffused mercury  
b) Direct measuring  
c) Dropping mercury electrode  
d) Diffusion measuring

- (s) Diazotization titration method is suitable for assay of \_\_\_\_\_.
- |                              |                            |
|------------------------------|----------------------------|
| a) Primary aliphatic amine   | b) Primary aromatic amine  |
| c) Secondary aliphatic amine | d) tertiary aromatic amine |
- (t) Ohm's law can be mathematically represented as \_\_\_\_\_.
- |                    |                   |
|--------------------|-------------------|
| a) $R \propto 1/a$ | b) $I = E/R$      |
| c) $C = 1/R$       | d) $R = \rho l/a$ |

**Que. No. 2 Attempt any TWO of the following:**

**(10 x 2 = 20)**

- a) Explain principle and steps involved in the gravimetric analysis.
- b) Explain titration curve with example of
- |                               |                              |
|-------------------------------|------------------------------|
| i. Strong Acid Vs Strong Base | ii. Strong Acid Vs Weak Base |
| iii. Weak Acid Vs Weak Base   | iv. Weak Acid Vs Strong Base |
- c) What is potentiometric analysis? Enlist types of electrodes used in potentiometry. Explain construction and working of standard hydrogen electrode.

**Que. No 3. Attempt any SEVEN of the following**

**(5 x 7 = 35)**

- a) What are errors? Explain determinant and indeterminate errors.
- b) Write a note on primary and secondary standards.
- c) Explain types of solvent used in non aqueous titration with suitable example.
- d) How is Calcium Gluconate assayed? Explain preparation and standardization of Disodium EDTA.
- e) Write principle behind the diazotization titration.
- f) Classify Redox titration? Enlist the difference between Iodometric and Iodimetric titration.
- g) Give the principle involve in the permanganate titration. How  $KMnO_4$  is standardized.
- h) Write a note on principle, construction and working of polarography.
- i) Explain the principle involve in the conductometry. Add a note on effect of dilution on conductance.

**----- END OF PAPER -----**