**MULTIPLE CHOICE QUESTIONS (LAB)**

**PROGRAM : B.Tech [Common]**

**SUBJECT/ CODE: CHEMISTRY PRACTICAL/18CYB101J**

1. The color of phenolphthalein indicator in acid solution is
2. Pink
3. Yellow
4. Colourless
5. Orange

**Answer: c. Colourless**

1. The equivalent weight of Sodium Carbonate [Na2CO3] is
2. 40
3. 53
4. 55.85
5. 63

**Answer: b. 53**

1. When basic solution is titrated against HCl in the burette with Methyl orange indicator, the end point is the color change from
2. Yellow to Violet
3. Orange to Yellow
4. Appearance of Pink color
5. Yellow to Orange

**Answer: Yellow to Orange**

1. Methyl orange is
2. Pink in acidic medium, yellow in basic medium
3. Yellow in acidic medium, pink in basic medium
4. Colourless in acidic medium, pink in basic medium
5. Pink in acidic medium, colourless in basic medium.

**Answer: a. Pink in acidic medium, yellow in basic medium**

1. Phenolphthalein color in basic medium is
2. Pink
3. Orange
4. Yellow
5. Colourless

**Answer: a. Pink**

1. When mixture of sodium carbonate and sodium hydroxide solution is titrated against HCl solution, the Phenolphthalein end point correspond to
2. Neutralization of OH- ions and CO32- ions
3. Neutralization of OH- ions only
4. Neutralization of CO32- ions only
5. Neutralization of OH- ions and half of CO32- ions

**Answer: d. Neutralization of OH- ions and half of CO32- ions**

1. A neutralization reaction is a --------- reaction taking place between the acids and the bases.
2. double displacement
3. Displacement
4. Substitution
5. Addition

**Answer: a. double displacement**

1. A precipitation reaction is a double displacement reaction taking place between
2. Acids and bases
3. two aqueous ionic compounds
4. two bases
5. two acids

**Answer: b. two aqueous ionic compounds**

1. In determination of mixture of bases by titration method, the amount of Sodium Hydroxideis calculated as---.
2. N x Equivalent mass ofSodium Carbonate / 10
3. N [OH and CO32- portion] x Equivalent mass of Sodium Hydroxide and Sodium carbonate / 10
4. N [OH portion] x Equivalent mass ofSodium Hydroxide / 10
5. N [CO32- portion] x Equivalent mass of Sodium carbonate /10

**Answer: c. N [OH portion] x Equivalent mass ofSodium Hydroxide / 10**

1. When pH is below 8.5 the indicator ---- is colourless.
2. EBT
3. Methyl orange
4. Phenolphthalein
5. K2CrO4

**Answer: c. Phenolphthalein**

1. What is the indicator used for estimation of hardness?
2. Phenolphthalein
3. Methyl orange
4. Eriochrome Black – T
5. Potassium dichromate

Answer: c. **Eriochrome Black – T**

1. Hardness of water is conventionally expressed in terms of equivalent amount of \_\_\_\_\_\_\_\_\_\_\_\_.  
   a) H2CO3  
   b) MgCO3  
   **c)** CaCO3  
   d) Na2CO3

**Answer: c. CaCO3**13. One ppm is equal to \_\_\_\_\_\_\_\_\_.

1. 100 mg / L
2. 10 mg / L
3. 1000 mg / L
4. 500 mg / L

**Answer: c. 1000 mg / L**

14. Which of the following does not cause the permanent hardness in water?

a) Nitrates

b) Sulphates

c) Chlorides

d) Bicarbonates

**Answer: d. Bicarbonates**

15. Soft water + Buffer + EBT ----------🡪

1. Appearance of wine-red colour
2. Appearance of steel blue colour
3. Formation of weak complex
4. Formation of brown precipitate

**Answer: b. Appearance of steel blue colour**

**16. Temporary hardness in water can be removed by:** a) adding soda

b) distillation

c) boiling

d) adding lime-soda

**Answer: c. boiling**

17. In EDTA method, the purpose of adding buffer is \_\_\_\_\_\_\_\_.

1. to maintain the pH of 6-8 range
2. to maintain the pH of 8-10 range
3. to maintain the pH of 4-6 range
4. to maintain the conc. of the reagent

**Answer: b. to maintain the pH of 8-10 range**

18. Which of the following is not a unit of hardness?  
a) Parts per million  
**b)** Degree centigrade  
c) Degree clarke  
d) Degree French

**Answer: b. Degree centigrade**19. Temporary hardness of water is caused due to the presence of dissolved

1. calcium hydrogen carbonates only
2. magnesium hydrogen carbonates only
3. Sulphates and chlorides of calcium or magnesium
4. calcium hydrogen carbonates and magnesium hydrogen carbonates

**Answer: d. calcium hydrogen carbonates and magnesium hydrogen carbonates**

20. Permanent hardness of water cannot be removed by

1. Adding soda
2. Adding lime soda
3. Distillation
4. Boiling

**Answer: d. Boiling**

**21. A buffer solution comprises which of the following?**

**a) a weak acid in solution**

**b) a strong acid in solution**

**c) a weak base in solution**

**d) a weak acid and its conjugate base in solution**

**Answer: d. a weak acid and its conjugate base in solution**

22. What is the role of chromate ions in chloride estimation?

1. It acts as a reducing agent
2. It acts as a buffer
3. It acts as an indicator
4. It acts as an oxidizing agent

**Answer: c. It acts as an indicator**

23. What is the pH range in which chloride determination using Mohr’s method is conducted?

1. < 3
2. 5
3. > 12
4. 6 -9

**Answer: d. 6 -9**

24. Which of the following is not a primary standard?

1. NaCl
2. Anhydrous Na2CO3
3. AgNO3
4. Oxalic acid

**Answer: c. AgNO3**

25. Which indicator is used in Mohr’s method?

1. Potassium Chromate
2. Silver Nitrate
3. Potassium dichromate
4. Silver Chromate

**Answer: a. Potassium Chromate**

26. Estimation of chloride reaction is

1. Redox reaction
2. Equlibrium reaction
3. Precipitation reaction
4. Catalytic reaction

**Answer: c. Precipitation reaction**

27. Which type of reaction occurs in the following reaction AgNO3 + NaCl → AgCl + NaNO3?

1. Displacement reaction
2. Single replacement
3. Decomposition
4. Double displacement reaction

**Answer: d. Double displacement reaction**

28. Why do we have to standardize AgNO3 solution?

1. To find the normality of NaCl
2. To calculate the normality of AgCl
3. To find the normality of AgNO3
4. To calculate the volume of NaCl

**Answer: c. To find the normality of AgNO3**

29. What is the advantage of Mohr’s method?

1. A Very clear colour change
2. Simple method
3. Capability for different PH
4. Must be 1M nitric acid solution.

**Answer: b. Simple method**

30. In Mohr’s method the solution needs to be near neutral, because

1. Silver chloride forms at high pH,
2. Silver precipitates at low pH
3. Chromate forms H2CrO4 at low pH, which delays the formation of the precipitate.
4. Potassium chromate dissolves at high pH.

**Answer: c. Chromate forms H2CrO4 at low pH, which delays the formation of the precipitate.**