Chettinad College of Engineering & Technology
Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai.

Department of Science & Humanities (Chemistry)

UNIT 1 – WATER AND ITS TREATMENT

QUESTION BANK

1. The water is said to be hard, when it contains

a) Dissolved sodium salts

b) Acid solution

c) **Dissolved Ca and Mg salts**

d) Precipitate in suspension

Answer: (c)

2. Hardness in water is mainly caused by the presence of

a) Sodium chloride

b) Sodium carbonate

c) **Calcium chloride**

d) Potassium nitrate.

Answer: (c)

3. A sample of water containing sodium chloride is

a) **Soft water**

b) Hard water

c) Moderately hard

d) Mineral water

Answer: (a)

4. Carbonate hardness in water can be removed by

a) Filtration

b**) Boiling**

c) Sedimentation

d) Washing

Answer: (b)

5. Permanent hardness in water is not caused by the presence of

a) Calcium chloride

b) Magnesium sulphate

c) Calcium sulphate

d) **Magnesium carbonate**

Answer: (d)

6. Solubility of calcium sulphate in water

a) **Increases with rise of temperature**

b) Decreases with rise of temperature

c) Remains unaltered with rise of temperature

d) Does not follow any definite pattern with rise of temperature.

Answer: (a)

6. Which one of the following is not a unit of hardness

a) mg/l

b) ppm

c**) mg**

d) ^{o}Cl

Answer: (c)

7. What is the equivalent weight of CaCO3

a) 30

b) 40

c**) 50**

d) 60

Answer: (c)

8.Which of the following is equal to 1ppm?

a. 0.07 ^{o}Cl

b. 0.07 ^{o}Cl

c. 0.1 ^{o} Cl

d. 2.0 ^{o} Cl

Answer: (a)

9. Hardness is expressed in terms of---------equivalents

a. CaSO4

b. Mg(HCO3)2

c. CaCO3

d. CaCl2

Answer: (c)

10. What is the role of EDTA

a) Analyte

b) Buffer

c**) Ligand**

d) Indicator

Answer: (c)

11. A buffer solution is a mixture of -------- & --------

a) Strong acid & strong base

b) Strong base & its salt

c) Weak acid & weak base

d) **Weak base & its salt**

Answer: (d)

12. The end point of the determination of hardness by EDTA is -----

a) Colourless to steel blue

b) Steel blue to colourless

c) **Wine red to steel blue**

d) Wine red to colourless

Answer: (c)

13. Which form of EDTA is soluble in water?

a. Monohydrated salt

b. Dihydrated salt

c. Monosodium salt

d. Disodium salt

Answer: (d)

14. The estimation of salt content in water by EDTA titration can be used to determine ---------- of the sample water.

a. Alkalinity

b. pH

c. Hardness

d. Total dissolved salts

Answer: (c)

15. The maximum number of binding sites in EDTA are

a. 2

b. 4

c. 6

d. 8

Answer: (c)

16. Hard water is unfit for use in boilers for generating steam because ------

a. Its boiling point is higher

b. It causes foaming

c. Water decomposes into O2 and H2

d. It produces scales inside the boilers

Answer: (d)

17. The slimy and non adherent precipitate suspended on the surface of boiled hard water is called

a. Scale

b. Sludge

c. Formig

d. Priming

Answer: (b)

18. The hard and adherent precipitate formed on the sides of the boiler is called -----

a. Scale

b. Sludge

c. Formig

d. Priming

Answer: (a)

19. Soft water is not a demineralized water whereas a demineralized water is soft water because ------

a. Soft water does not contain sodium, potassium, sulfate, chloride ions

b. Soft water contains sodium, potassium, sulfate, chloride ions

c. Calcium and magnesium ions present in demineralized water

d. Soft water does not gives lather

Answer: (b)

20. The maximum concentration of total dissolved salts in drinking water should be ------

a. 1000 ppm

b. 500 ppm

c. 200 ppm

d. 100 ppm

Answer: (b)

21. Which one of the following is anion exchange resin?

a. Urea-formaldehyde resin

b. Sulphonated polystyrene

c. Carbonated coal

d. Nylone 6,6 resin

Answer: (a)

22. Calgon is a trade name given to --------

a. Sodium silicate

b. Calcium phosphate

c. Sodium hexametaphosphate

d. Sodium Zeolite

Answer: (c)

23. Colloidal conditioning agent is --------

a. EDTA

b. Disodium hydrogen phosphate

c. Calgon

d. Gelatin

Answer: (d)

24. The basis of reverse osmosis is

a) Osmotic pressure is greater than hydrostatic pressure

b) Osmotic pressure is equal to hydrostatic pressure

c) **Hydrostatic pressure is greater than osmotic pressure**

d) Osmotic pressure does not exist

Answer: (c)

25. In Reverse osmosis the solvent was moved from ……..

a) **Higher concentration to lower concentration**

b) Lower concentration to higher concentration

c) No movement of solvent

d) High temp to lower temp

Answer: (a)