**1 . Fill in the blanks:**

a) The most commonly used indicator for measuring carbonate alkalinity of water is \_\_\_\_\_\_\_\_\_\_.

b)\_\_\_\_\_\_\_\_\_\_\_\_\_ is an organic gas widely called Marsh Gas.

c) The vertical sequence of soil horizons is termed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d) Fresh water reaches maximum density at \_\_\_\_\_\_\_\_\_\_°C.

e) Freezing point of sea water is \_\_\_\_\_\_\_\_\_ °C.

f) The decomposed organic residues that present in soil are called\_\_\_\_\_\_\_\_\_\_\_\_\_.

g) The most common colour chart used for describing soil colour is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

h) The soil containing at least\_\_\_\_\_\_\_\_\_\_\_ of clay is ideal for fish pond construction.

i) The solution whose concentration is exactly known is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

solution.

j) Latent heat of fusion of water is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2. Match the following:**

Section-A

1. Winkler method I. Turbidity

b. Real density ii. Salinity

c. Apparent density iii. Lux Meter

d. Hardness iv. Health stone

e. S.P. Sorenson v. Particle Density

f Refractometer vi. Soap wasting property

g Muffle furnace vii. Bulk Density

H Light intensity viii. Dissolved Oxygen

I Alum ix. TVDS

J Zeolite x. pH

**3. State True or False:**

a) In an acidic solution H' > OH.

b) Salinity (in PPT) = 1.80655 x Chlorinity (in PPT).

c) Lovibond comparator is used to determine salinity of sea water.

d) Relatively sand & silt have low chemical activity.

e) Conductivity meter is used for turbidity measurement of water.

f) CO₂ helps to buffer the pond environment.

g) Granite weathered slowly as compared to basalt.

h) With increase in organic matter of the soil the particle density decreases.

1. The particle density of a soil is always smaller than its bulk density.

j) Weathering is basically a process of destruction.

**4. Explain the following:**

a) Volumetry

b) Standard solution

c) pH

d) Colloidal soil particles.

e) Nephelometry

f) Chlorination

g) Alum

h) Fertilizer

i) Acid sulphate soil

D) Bulk density

5. What are dissolved gases present in natural water? Give a note on the role of dissolved oxygen in natural water.

1. Differentiate between Fertilizer and manure.

7. What is soil organic matter? How does it form? Explain some general properties of soil organic matter.

8.What is soil? Explain in brief about the different components of soil & their role in soil fertility.

1. What do you mean pH? Draw a pH scale. Write down the advantages of ideal pH for pisciculture.
2. Give a note on soil & water amendments.
3. Write down the compositions of surface water & ground water.

12. **Differentiate between**

a. Common analytical instruments used for soil & water analysis

b. Reclamation of acidic soil