**Practical Ecology and pollution**

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**Q/ A- Define the following:**

1. Softening hard water

2- Water acidity

3-Turbidity

4-Temparary Hardness

5-soil

6-texture

 **Fill the following blanks with appropriates word and phrase:**

1- There are two methods to detect soil texture classes such as ---------------------& ---------------------that using in --------------------- & -------------------- respectively.

2-The instruments that use to measuring humidity are ---------------, --------------& ----------------.

3 -Forms of soil water are -------------------------, -----------------------------& ---------------------------

4- water holding capacity is ----------------

5-components of the soil are---------------

6- The instruments that use to measuring wind speed and direction are---------------------

1. The main sources of carbon dioxide in the water are …………………… and………………….
2. Phenonaphthaline indicator produce pink color when it is added to water with pH ………………….
3. ……………………… It is a type of measured acidity in water by titration to a pH of less than 4.5 and by using ……………………… indicator to determined it.
4. The indicator that uses to determine total hardness is called **……………….** and to determine calcium hardness is called **……………………**
5. Before each water sampling, the turbidimeter should be calibrated by using standard solution of **…………………, …………………**and …………………… NTU.
6. Salts of calcium and magnesium in the hard water are as ………………., ………………, and **…………………...**
7. Despite of geological formation, other factor that affects the values of total hardness is ………………
8. Main components of alkalinity are …………………, ………………….and…………….
9. …………………………. is hardness that cannot be removed by boiling.
10. In laboratory, turbidity is measured by …………………... method using a turbidimeter.
11. The ability to resist changes in pH by neutralizing acids or bases is called …………………….

 **Define the following:**

1- Atmospheric pressure 2- water holding capacity 3- Meteorological station

4- Air quality Index 5- wind direction 6- anemometer 7-hygrometer 8- psychrometer

**Match A & B:**

|  |  |  |  |
| --- | --- | --- | --- |
| No | **A** |  **No** | **B** |
| 1 | Sand |  | Wind speed |
| 2 | anemometer |  | maximum thermometer |
| 3 | Psychrometer |  | Organisms |
| 4 | R horizon |  | Wind direction  |
| 5 | Mercury thermometer |  | Has large pore, lacks the ability to hold nutrient and water. |
| 6 | Synodor |  | Wind direction |
| 7 | vane  |  | Water vapor in air  |
| 8 | Factors effect on soil |  | Maximum and minimum temperature  |
| 9 | Silt |  | Surface layer |
|  |  |  | Precipitation  |
|  |  |  |  Diameter is 0.002 to 0.05 mm |
|  |  |  | Has Small pore, large particles, has ability to save water |
|  |  |  | final layer |
|  |  |  | Atmospheric pressure  |
|  |  |  | Diameter <0.002 mm |



**Answer the following according on this figure:**

1. Name of it?
2. Function of it?
3. Mechanism work of it?

In the sample soil, the clay% is three times greater than sand%, (if sand is 20), calculating soil textural class depending on this figure? Then, write characteristics of it?

**Q/-Write briefly about the following:**

1. Alkalinity is important to aquatic organisms.
2. Using PH 10 to determining Ca+2 hardness**?**
3. Moderate acidity in irrigation water is beneficial to alkali soils.
4. Turbidity can harm fish and other aquatic life.

**Q/ A 50 mL water sample is tested for Alkalinity. If 1.2 mL titrant (0.02 N H2SO4) is used to pH 8.3 and and 4 mL titrant is used to pH 4.5, calculate:**

1. phenolphthalein alkalinity
2. Total alkalinity
3. Acidity
4. Name indicators and its colors that used in this test

**Q- Count the methods of softening hard water and write about one of them.**

**C- Count the sources of H+ in water.**