**Q1. Fill in the blanks**

3. The CEC increases when pH increase.

*CEC determination comprise of three stages :-*

1- *Saturation with a cation.*

*2- Washing.*

*3- Replacement or extraction of an indicator cation.*

***Methods of analysis***

1. Dry combustion method.
2. Wet digestion method.
3. Loss on ignition method.

***Points taken into consideration with sampling***

* Uniformity of samples in weight or volume.
* Must be avoiding samples from.
  + Wet soils.
  + Near roads.
  + The storage of fertilizer in the field.
  + Top of hills or valleys.

Q2. what is the EC of a soil with the following ion concentrations?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ion | Ca2+ | Mg2+ | K+ | Na+ | HCO3- | CO3= | Cl- | SO4= |
| Conc, meq/L | 1 | 2 | 1 | 0.5 | 2 | 1 | 1 | 0.5 |

A1.

∑cation or anion meq/L

EC (dSm-1) =

10

= (1+2+1+0.5)/10

=4.5/10

=0.45 dS/m

Q3. What is the EC of a soil at 25c, if its EC at room temperature (21c) was 3.1 dS/m

EC will increase 2% with increase of each Celsius degree

The difference of temperature is 25-21=4C

EC at 25c = EC + (EC \* 4\*2/100) = 3.1+(3.1\*4\*2/100)

= 3.1+0.248

= 3.348 dS/m