**Q1. Fill in the blanks**

1**. Soil electrical conductivity** is an expression of total concentration for soluble salts

or the reciprocal of electrical resistance of a solution to electric current at 25C0(expressed with unit dSm-1).

2. Essential nutrients are most available to most plants at a pH between 6 to 7.5.  
3. The CEC increases when pH increase.

4. At saturation, soil paste glistens as it reflects light and fall freely when the spatula with saturated soil is tapped.

5. Saturation percent of soil =

Total weight of water

SP = ------------------------------------- X 100  
 Weight of the oven dry soil

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