Example of Questions of Principle of Soil Sciences

Q1) Mark "T" for the statements you believe are true and "F" for statements you believe are false, and then correct the false statement. "X, marks"

1- Pedology and Edaphology are the main braches of soil science.
2- The Simplest soil horizon comprises of O, A, E, B, C, and R horizons.
3- Soil pH is the single most important chemical property of the soil.
4- Topography is the most important soil formation factor.
5- The typical compositions of soil based on volume are 25% air, 25% water, 45% mineral and 5% organic matter.
6- Soil bulk density always is greater than particle density.
7- Pores larger than 0.05 mm are called *macropores.*
8- Heterotrophic organism can make own food from organic compounds.
9- Clay minerals are formed from the tetrahedral and octahedral layers.
10- The main components of humus are Humic acid, Fluoric acid and Human

Q2) Determine gravimetric water content (P_w) and Volumetric water content (P_v) of a soil sample has a weight of 0.7 kg and the volume was found to be 3.5×10^{-4} m^3 After drying out the weight was reduced to 0.6 kg. The particle density is 2.6 kg m^{3-}. "X, marks"

Q3) Calculate the CEC of Soil with 5% OM and 18% Clay. If the moisture content based on the volume is 25% and pH is 5.8.

Q4) Define five of these terms (Soil Survey, Soil classification, Chelate, Soil colloids, Soil Structure, Parent material).

Q5) Answer four of the following questions. "X, marks"

A- What is soil pH and why is it important?
B- Listed dominant soil orders in Iraq and Kurdistan
C- Explain briefly 4 basic processes of soil formation

D- What are the factors affecting decomposition of humus?

E- Classify soil water with the aid of diagram.

Q6) Fill the blanks with correct word "X, marks"

1- The term SOIL was derived from the Latin Word .....
2- Soil science based on traditional division can be divided in to …….. and ……..
3- The main processes of soil formation are ……..., ……., ……. and ……..
4- Soil color is described by the parameters called ……, ……. and …….
5- Clay minerals are formed from the …….and ……. layers.
6- The typical compositions of soil based on volume are ……., ……, ……. and …….
7- ……., ……. And ……. are 3 types of Soil Survey
8- Ideally, the total pore space should be ……. of the soil …….
9- The …….. is critical because it allows for respiration of both plant roots and soil organisms.
10- There are 3 types of Soil based on its pH value ……..…., ……..…. And ……. Soil.

Q7/ Describe the relationship between soil pH and the chemical solubilities of the following ions: "X, marks"

1- Aluminum, iron, copper, zinc and manganese.
2- Calcium and magnesium.
3- Phosphate and molybdate.

Q8) **Describe the five soil forming factors. "X, marks"**

(Soil profile, color, texture, density, clay minerals, horizon, …..)

Q9) Explain how the following soil characteristics vary with depth: "X, marks"

a. structure.

b. texture.

c. color.
d. bulk density.
e. porosity.