UNIT-I

S.No.	Questions	BTL	CO	PO
	Part–A (Short Answer Questions)			
1	State the process of formation of soil	1	1	1
2	What do you mean by three phase system with its use and block diagram.	1	1	1
3	Explain the significance of a grain size distribution curve.	1	1	1
4	Define: a) Water content , b)porosity, c)degree of saturation, d)void ratio.	1	1	1
5	Define: a)Dry density, b)saturated unit weight, c)submerged unit weight.	1	1	1
6	Define consistency limits	1	1	1
7	Write the expression for toughness index, flow index and draw plasticity chart	1	1	1
8	What is IS classification of soil and the principle of soil classification	1	1	1
9	A sample weighing 18kn/m^3 and has water content of 30%. The Specific gravity of soil particles is 2.68. Determine void ratio and porosity.	1	1	1
10	Differentiate between saturated density and bulk density.	1	1	1
	Part– B (Long Answer Questions)			
11	a) Explain in detail the laboratory methods for grain size distribution of fine and coarse soil b) Explain the process of formation of soil	2 2	1 1	3 2
12	a) Starting from three phase representation of soil mass, derive the relationship between bulk unit weight, specific gravity, void ratio and degree of saturation b) With the help of three phase diagram, define the following: (i) Voids ratio (ii) Porosity (iii) Degree of saturation (iv) Water content (v) Absolute/true specific gravity (vi) Apparent specific gravity (vii)Air content (viii)Percentage of air voids and (ix)Relative density	2 2	1 1	3 1
13	a) Explain laboratory tests to determine the (i)specific gravity of soil (ii)water content of soil b) Discuss the importance of Atterberg's limits of soil	2 2	1 1	2 2
14	a) Discuss the method for determination of shrinkage limit of soil. b) A sample of saturated soil has a water content of 25% and a bulk unit weighs of 20kN/m^3. Determine the (i) dry unit weight (ii) void ratio (ii) specific gravity of the soil. What would be the bulk unit weight of the soil if the soil is compacted for the same void ratio with a degree of saturation 90%.	2 4	1 1	1 1
15	An undisturbed sample of soil has a volume 100cm3 and mass 200g. On oven drying for 24 hours, the mass is reduced to 170g. If G=2.68.Determine the (i) void ratio (ii) water content and (iii) Degree of saturation of soil.	4	1	3
16	The moisture content of an undisturbed sample of clay belonging toavolcanicregionis265%under100%saturation.The specific gravity of the solids is 2.5. The dry unit weight is 21kN/m^3. Determine (i) the saturated unit weight, (ii) the submerged unit weight, and (iii) void	4	1	3

	ratio.			

Blooms Taxonomy Level (BT): (L1–Remembering; L2–Understanding; L3–Applying; L4– Analyzing; L5–Evaluating; L6–Creating)