KSV

LDRP INSTITUTE OF TECHNOLOGY & RESEARCH, GANDHINAGAR.

B.E. 5th Semester

MID SEM EXAMINATION

Date/Day : 25/08/14 , Monday **Branch : Civil Engineering**

Subject Name & Code : GEOTECHNICAL ENGINEERING-1 **Max. Marks : 30**

Time : 8:30 AM to 10:00 AM

Instructions: 1) All questions are **compulsory**

2) Figures to the **right** indicate full marks.

3) Indicate **clearly**, the options you attempt along with its respective question number.

Q.1 (a) Define phase diagram and draw phase diagrams in terms of void ratio 'e' and porosity 'n'. [5]

(b) Draw Coulomb's failure envelope for C-Soil, ϕ Soil and C- ϕ soil soil. [5]

Q.2 (a) Differentiate Physical weathering and Chemical weathering. [5]

(b) The total unit weight of a soil is 18.8 kN/m^3 , G = 2.67, & moisture content = 12 %. Calculate the dry unit weight, void ratio and the degree of saturation. [5]

OR

Q.2 (a) Define Toughness Index, Activity and Sensitivity. [5]

(b) Write a short note on sedimentation analysis for particle size distribution. [5]

Q.3 (a) What do you understand by consistency of soil? How LL is determined in laboratory? [5]

(b) Which are the limitations of sedimentation analysis? [5]

OR

Q.3 (a) A soil sample has mass 600 gms and volume 400 cc. On drying the mass reduces by 50 gms. If the specific gravity of soil is 2.7. calculate moisture content and degree of saturation. [5]

(b) Explain shear test based on drainage conditions. [5]

(b) Explain Mohr circle of stress. [5]

**************All THE BEST***************

M.N. Modi.

Hetal Pandya
27/8/14.