S.B. Roll No……

SOIL AND FOUNDATION ENGINEERING
5th Exam/Civil/2517/Nov'18

Duration: 3Hrs. **M.Marks:75**

SECTION-A

Q1. a) Fill in the blanks. **15x1=15**

i. Soil fraction less than 2 micron is known as_____.
ii. The diagram which shows the constituents of soil are called_____
iii. The soil sample is heated in oven at 105-110ºC for 24 hours for removing_____ moisture
iv. The process of separating the coarser fractions of soil is called_____.
v. Darcy's equation is valid for _____flow only
vi. The pressure of water below water table is _____than the atmospheric pressure.
vii. Total settlement for double drainage is _____times faster than as for single drainage.
viii. In direct shear test, plane of shear failure is _____.
ix. Undisturbed samples are obtained with the help of _____.
x. _____footing is useful in reducing the differential settlement.

b) State True or False.

xi. The wind-blown dust is called loess.
xii. Liquid limit test is performed only for coarse grained soils.
xiii. Pore pressure acts equally on all the sides of soil particle.
xiv. When void ratio is reduced, the density of soil is reduced.
xv. The degree of plasticity of sand is zero.

SECTION-B

Q2. Attempt any six questions. **6x5=30**

a. What is Darcy's law? Write down its limitations.
b. Define "Degree of Saturation" and "porosity"
c. What do you understand by "settlement of soil"? Write down its types.
d. Write down the difference between "Compaction" and "Consolidation".
e. What is effective stress? Write down its importance.
f. Discuss any two engineering works which requires compaction.
g. What do you understand by Degree of compaction?
h. Discuss the different consistency limits.
i. Discuss Deep foundations.

SECTION-C

Q3. Attempt any three questions. **3x10=30**

i. What do you understand by "Permeability of soil"? Explain the various factors affecting permeability.
ii. Explain the factors affecting "Compaction".
iii. Explain the different methods of soil exploration.
iv. Discuss in detail the importance of 'Study of soil 'in engineering.
v. An undisturbed sample of soil has a volume of 100 cm^3 and weighs 190 g. On oven drying for 24 hours, the weight reduces to 160 g. If the specific gravity of grains is 2.68, determine the water content, void ratio and degree of saturation.