Q.27 What are factors which affects the shear strength of cohesion less soil? (CO7)

Q.28 Explain the stress - strain curve and give its significance for loose and dense soil. (CO7)

Q.29 Define Sensitivity. Give its importance. (CO7)

Q.30 What are the various methods used for field compaction. (CO8)

Q.31 What are the methods used to rectifying tilts? (CO11)

Q.32 Explain soil exploration with its types. (CO9)

Q.33 Explain Area ratio and Recovery ratio. (CO9)

Q.34 Explain Water table and Overburden pressure corrections. (CO10)

Q.35 Define Well foundation. Explain its necessity. (CO11)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain thin wall sampler and piston with sketch also explain types of soil samples. (CO9)

Q.37 a) What are the limitations of plate load test?

b) Write a short note on Geotextile. (CO10)

Q.38 a) What is the necessity of pile foundation .

b) Write a short note on tilt and shifts. (CO11)

Roll No. .....

5th Sem / Branch : Civil, Constr. Mgmt., Civil Engg. (Spl. Highway Engg.)

Sub.: Soil Mechanics and Foundation Engineering/ Soil & Foundation Engg.

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 The windblown soil are associated with (CO1)

a) Loess b) Alluvial soil

c) Marine soil d) Lacustrine soil

Q.2 Theoretically the void ratio in soil can have the following values: (CO2)

a) Less than 1 only

b) Less than 0.5

c) More than one

d) Can be less or more than one

Q.3 The soil having 50% particle size (by weight) larger than 75 micron is knows as (CO3)

a) Cohesion less soil b) Both (a) & (b)

c) Cohesive soil d) None of these

Q.4 The property of soil mass which permits the seepage of water through its interconnecting voids, is called (CO4)

a) Capillarity b) Porosity
c) Permeability d) None of these

Q.5 Effective stress is also known as (CO5)
a) Principal stress b) Inter granular stress
c) Pore pressure d) None of these

Q.6 Continuous soil deformation in highly plastic soils due to constant shear stress is (CO6)
a) Creep b) Swelling
c) Heaving d) Plastic flow

Q.7 Vane shear test is used for (CO7)
a) Sands b) Moderate clays
c) Silts d) Soft & sensitive clays

Q.8 The process of gradual reduction in the volume of soil mass under static loading is (CO8)
a) Compaction b) Compression
c) Consolidation d) None of these

Q.9 In modified proctor test, the weight of rammer is (CO8)
a) 4.8 kg b) 2.6 kg
c) 2 kg d) 5.5 kg

Q.10 The footing which supports a single column is known as (CO11)
a) Strap footing b) Raft footing
c) Strip footing d) Isolated footing

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 For fully saturation soil, volume of S is_____. (CO2)
Q.12 Define specific gravity . (CO2)
Q.13 Define Plasticity index. (CO3)
Q.14 Darcy's law is valid for _____ type of flow. (CO4)
Q.15 Define seepage velocity. (CO4)
Q.16 Define Effective stress. (CO5)
Q.17 Define secondary consolidation. (CO6)
Q.18 Define uniform settlement. (CO6)
Q.19 Define unconsolidated undrained condition. (CO7)
Q.20 Define Maximum dry density. (CO8)

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain the formation of soils.
Q.22 Calculate the degree of saturation of a natural soil deposit having water content of 15% specific gravity 2.50 and void ratio of 0.50. (CO2)
Q.23 Explain textural classification of soil. (CO3)
Q.24 Explain Permeability along with its importance. (CO4)
Q.25 Explain the concept of effective stress. (CO5)
Q.26 What is differential settlement? Explain various cause of settlement. (CO6)