

JK Lakshmipat University, Jaipur

Institute of Engineering and Technology

End Term – Examination
B.Tech.[3rd YEAR]/[5th Sem.]/[2013-14]

Course Name: GEOTECHNICAL ENGINEERING-I
Course Code: CE506

Max Marks: 40
Time: 03.00 hr

Instructions:

1. Attempt all sections.



Section A

Q.1. Attempt all five questions. Each question carry equal marks.

(5 MARKS)

- (a) Black cotton soil are?
- (i) expensive (ii) residual
- (b) The moist soil is?
- (i) fully saturated soil (ii) partially saturated soil
- (c) Define Porosity ?
- (d) Write formula of Liquidity Index?
- (e) What is the relationship between the true velocity of flow and discharge velocity?
- (i) true velocity is less than discharge velocity
- (ii) discharge velocity is less than true velocity
- (iii) true velocity is equal to the discharge velocity
- (iv) none of the above

Q.2 Write short on the following ?

(5 MARKS)

- (a) Define Specific gravity and water content of soil?
- (b) Define and explain the oven drying method of determination of water content?

Section B

Note :- Attempt any four question? Each question carry equal marks?

Q.3 Define and explain the three phase system of the soil?

(5 MARKS)

Q.4 What do you understand by "Consistency of soil" ? Define Liquid limit, plastic limit, shrinkage limit, plasticity index, consistency index and liquidity index with the help of diagram ? (5 MARKS)

Q.5 Describe the Unified soil classification system (USCS) of soil in detail with neat diagram ? Also write the formula for group index method in HRB classification of soils ? (5 MARKS)

Q.6 Write a short note on Vane shear test of soil? (5 MARKS)

Q.7 Define soil structure ? Give the classification of soil structure in detail with neat sketches ? (5 MARKS)

Section C (Compulsory to attempt internal choice)

Q.8 What are the various factors affecting permeability ? Describe each in detail ? (10 MARKS)

OR

Q.8 What do you understand by stabilization of soils? Write various methods used for stabilization of soil and explain each methods in detail ? (10 MARKS)