B.TECH (REGULAR) ~~IIIRD SEMESTER~~ IV Semester

MID-SEM EXAM   SOIL- MECHANICS

CE-206   MAX MARKS : 30 MARKS, March 2019

ALL QUESTIONS ARE TO BE ATTEMPTED

AND CARRY EQUAL MARKS.

Q.NO.1. : An embankment for a highway 30 m wide and 1.5 m thick is to be
constructed from sandy soil, trucked in from a borrow pit. The water content of the sandy soil in the borrow pit is 15% and its void ratio is 0.69. Specifications require the embankment to compact to a dry weight of 18 KN/CUBIC METER. Determine- for 1 km length of embankment-the following:
a) The dry unit weight of sandy soil from the borrow pit to construct the embankment, assuming that G= 2.7.
b) The number of 10 CUBIC meter truckloads of sandy soil required to construct the embankment.
c) The weight of water per truck load of sandy soil.
d) The degree of saturation of the in-situ sandy soil. 10 Marks

Q.No.2. An inclined permeameter tube is filled with layers of soil of different permeability as shown below. Find the **total head, elevation head** and **pore water pressure** at points (A-B-C-D) with respect to the given datum, Assume: **3K = K2= 2K3= 1, 5K4**   10 Marks

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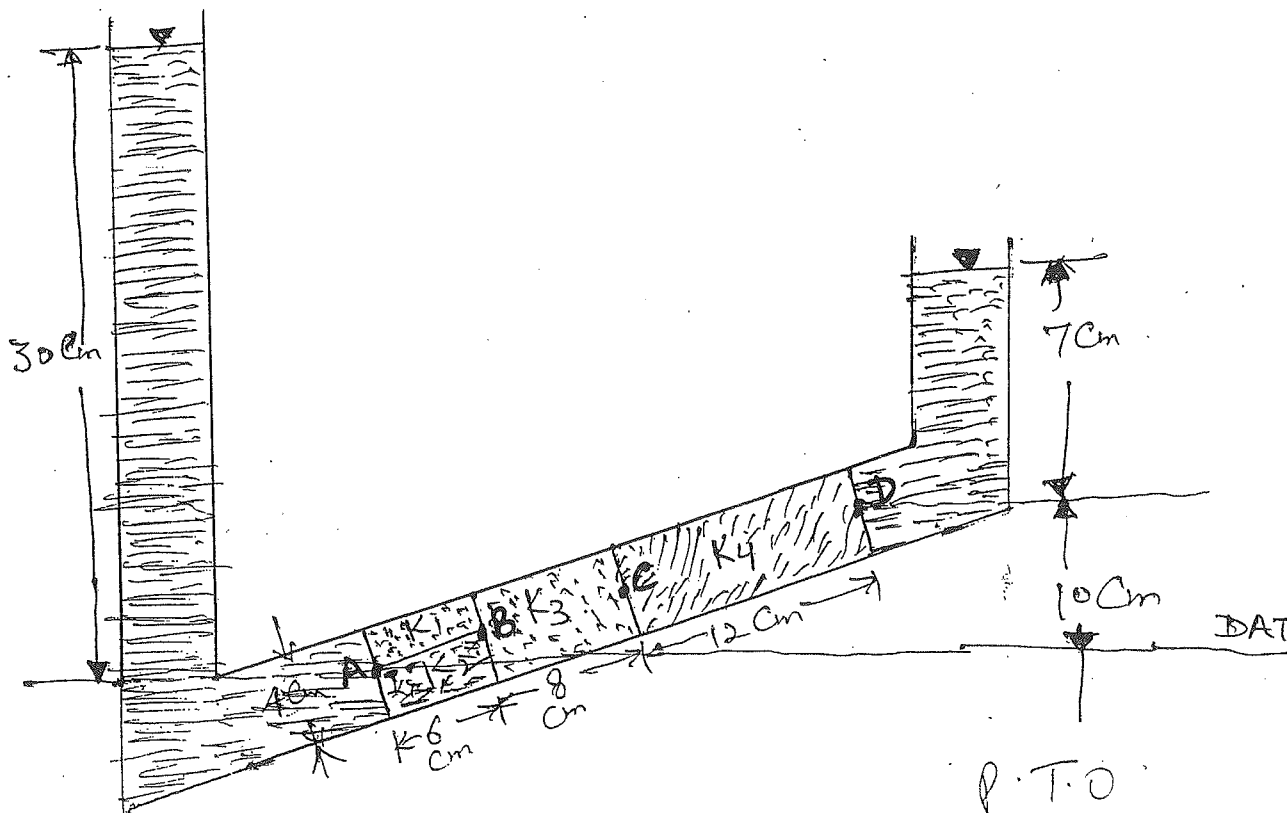
Q.No.3. (a) What are flow nets?

      (b) What are the properties of flow nets?

      (c) How the discharge is calculated by flow nets.

      As an example, draw a diagram showing flow nets and

      Label them with various symbols and show the

      Respective calculations and equations.

$$2+3+5=10 \text{ Marks}$$