R16

Code No: 136DV

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, November/December - 2020
SOIL MECHANICS
(Civil Engineering)

Time: 2 hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks
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1. Explain about soil formation and three phase system of soils with a neat sketch. [15]

2. Explain about Liquid Limit, Plastic Limit and Shrinkage Limit in soil mechanics. [15]

3. Explain about laboratory determination of coefficient of permeability in soils by using constant head test with a neat sketch. [15]

4. A horizontal stratified soil deposit consists of three layers. The coefficient of permeability of these layers is 5×10^{-4} cm/sec, 6×10^{-4} cm/sec and 8×10^{-4} cm/sec and their thickness from the ground surface are 3m, 4m and 5m respectively. Determine the average coefficient of permeability for horizontal flow and vertical flow for the stratified layers. [15]

5. Explain Newmark's influence chart for irregular areas with the help of neat sketch. [15]

6. A load 800KN acts as a point load at the surface of a soil mass. Determine the vertical stress at a point 3m below and 4m away from the point of action of the load by Boussinesq's theory and Westergaard's theory. [15]

7. Explain about Terzaghi's one dimensional consolidation theory and its boundary conditions. [15]

8. Explain about merits and demerits of direct shear test. [15]

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