

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)**

**CLASS: B.TECH
BRANCH: CIVIL**

**SEMESTER: VII
SESSION: MO/2022**

SUBJECT: CE419 ADVANCED GEOTECHNICAL ENGG.

TIME: 2 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 25.
 2. Candidates attempt for all 25 marks.
 3. Before attempting the question paper, be sure that you have got the correct question paper.
 4. The missing data, if any, may be assumed suitably.
 5. Tables/Data handbook/Graph paper etc. to be supplied to the candidates in the examination hall.
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Q1 (a) Explain the working of piston-sampler.	[2]		
Q1 (b) In a Geophysical test the time-distance plots gave $V_1=300\text{m/s}$; and $V_2=7500\text{m/s}$. The break point was located at 29m. Determine the depth of the overburden.	[3]		
Q2 (a) Define recovery ratio& it's conclusion.	[2]		
Q2 (b) A rectangular base of 5mx6m of a column load of 3 tonnes; determine the stress at 9m. depth use Boussineq's equation.	[3]		
Q3 (a) Write the objective of soil exploration.	[2]		
Q3 (b) Determine the area-ratio of a tube sampler with $D(o)=165\text{mm}$ and $D(i)=145\text{mm}$.	[3]		
Q4 (a) Write the different steps to draw the Newmark's charts.	[2]		
Q4 (b) Explain about contact pressure on surface for different types of soil.	[3]		
Q5 A rectangular base-size 7mx8mx3m of having a column,and carries a load of 10t. The Take the unit weight of R.CC = 2.5t/cum Calculate the stress value a depth 3m; below base. (Use any of method)	[2+3]		

::: 26/09/2022 :::M