

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

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

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

SUBJECT: CE419 ADVANCED GEOTECHNICAL ENGINEERING

TIME: 3:00 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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Q.1(a)	What is the importance of site investigation?	[CO1, BL I]	[2]
Q.1(b)	Write a short note on number and depth of boreholes.	[CO1, BL I]	[3]
Q.1(c)	Discuss the procedure of conducting Seismic refraction test.	[CO1, BL VI]	[5]
Q.2(a)	What are the uses of Boussinesq's equation?	[CO2, BL I]	[2]
Q.2(b)	What is use of knowing the stress distribution below foundations?	[CO2, BL I]	[3]
Q.2(c)	Illustrate the construction of Newmark,s influence chart.	[CO2, BL II]	[5]
Q.3(a)	What do you mean by Active earth pressure?	[CO3, BL I]	[2]
Q.3(b)	What are the assumptions of Rankine's earth pressure theory?	[CO3, BL I]	[3]
Q.3(c)	Describe Culmann's construction. Draw figure.	[CO3, BL II]	[5]
Q.4(a)	What is finite slope?	[CO4, BL I]	[2]
Q.4(b)	What are the types of slope failure?	[CO4, BL I]	[3]
Q.4(c)	Discuss slope stability analysis by method of slices. Draw figure.	[CO4, BL VI]	[5]
Q.5(a)	What is well sinking ?	[CO5, BL I]	[2]
Q.5(b)	What are the forces that act on well foundations?	[CO5, BL I]	[3]
Q.5(c)	Discuss the advantages and disadvantages of different shapes of well foundations. Draw figures.	[CO5, BL VI]	[5]

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