

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI**  
**(MID SEMESTER EXAMINATION MO/2023)**

**CLASS: BTECH**  
**BRANCH: CIVIL**

**SEMESTER : V**  
**SESSION : MO/2023**

**SUBJECT: CE419 ADVANCED GEOTECHNICAL ENGINEERING**

**TIME: 02 Hours**

**FULL MARKS: 25**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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			CO	BL
Q.1(a)	How to plan a subsoil exploration ?	[2]	1	IV
Q.1(b)	How to fix number of boreholes and depth of boreholes for various types of works ?	[3]	1	IV
Q.2(a)	Compare between laboratory and field vane shear test.	[2]	1	II
Q.2(b)	Compare between the Geophysical methods of soil exploration.	[3]	1	II
Q.3(a)	Comment on the acceptable value of area ratio of soil sampler.	[2]	1	III
Q.3(b)	Write the uses of stress distribution diagram (in soil media).	[3]	2	I
Q.4(a)	Draw the vertical pressure distribution (due to a concentrated load P), on a vertical line at a distance r away from the load. What is value of the vertical pressure at a depth z = 0 ?	[2]	2	V
Q.4(b)	Find the intensity of horizontal shear stress at a point 4 m depth, and 2 m horizontally away from the line of action of a point load of 20 kN ?	[3]	2	V
Q.5(a)	What is secondary settlement ?	[2]	2	I
Q.5(b)	Explain what is "isobar" ? Draw isobar for (i) Concentrated load, (ii) uniformly loaded circular area ?	[3]	2	V

:::22/09/2023 M:::