**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, November 2022**

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|  | **4BT7170** | Roll No. | Total Printed Pages: 2 |
| **4BT7170** |  |
| B. Tech. IV Year VII- Semester (Main/Back) End Semester Examination, November 2022  **(CV)** | |
| **BCV07102 : Geotechnical Engineering-II** | | | |

# Time: **3**Hours. Total Marks: **60**

Min. Passing Marks: **21**

Attempt **five** questions selecting one question from each Unit. There is internal choice from Unit I to Unit V. Marks of each question or its parts are indicated against each question / parts. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.

Use of following supporting material is permitted during examination for this subject.

# **1.--------------------------Nil--------------------** **2.------------------Nil-----------------------**

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|  | **UNIT-I (CO1)** | **Marks** | **Bloom Level** |
| **Q.1** | When the total pressure acting at midheight of a consolidating layer is 200 kN/m, the corresponding void ratio of the clay is 0.98. When the total pressure acting at the same location is 500 kN/m², the corresponding void ratio decreases to 0.81. Find the void ratio of the clay if the total pressure acting at midheight of the consolidating layer is 1000 kN/m² | **(12)** | **Evaluate** |
|  |  |  |  |
|  | **OR** |  |  |
|  |  |  |  |
| **Q.2** | Write a short note on various types of consolidation | **(12)** | **Remember** |
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|  | **UNIT-II (CO2)** |  |  |
|  |  |  |  |
| **Q.3** | There is a line load of 120 kN/m acting on the ground surface along y-axis the vertical stress at a point P which has x and coordinates as 2 m and 3.5 m, respectively | **(12)** | **Evaluate** |
|  |  |  |  |
|  | **OR** |  |  |
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| **Q.4** | Write a short note on Newmark’s Influence charts | **(12)** | **Remember** |
|  |  |  |  |
|  | **UNIT-III (CO3)** |  |  |
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| **Q.5** | Write a short note on sweedish slip circle method. | **(12)** | **Remember** |
|  |  |  |  |
|  | **OR** |  |  |
| **Q.6** | An unsupported slope is given in the figure. Determine the factor of safety against sliding for the trial slip surface. Take . The weight of the wedge ABD is 2518 KN and acts at a horizontal distance of 11m from the vertical AO | **(12)** | **Evaluate** |
|  |  |  |  |
|  | **UNIT-IV (CO4)** |  |  |
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| **Q.7** | A retaining wall is 8m high and has a vertical back. The back face of the wall is smooth and the upper surface of the fill is horizontal. Determine the thrust on the wall per unit length. Take c=10KN/m2and ). | **(12)** | **Analyze** |
|  |  |  |  |
|  | **OR** |  |  |
|  |  |  |  |
| **Q.8** | Determine the active earth pressure on the retaining wall shown in figure. Take | **(12)** | **Evaluate** |
|  |  |  |  |
|  | **UNIT V (CO5)** |  |  |
|  |  |  |  |
| **Q.9** | Write a short note on various types of foundations | **(12)** | **Remember** |
|  |  |  |  |
|  | **OR** |  |  |
|  |  |  |  |
| **Q.10** | Write a short note on underreamed piles | **(12)** | **Remember** |