Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **18CE2002** | **Duration :** | **3hrs** |
| **Sub. Name :** | **BASICS OF SOIL MECHANICS** | **Max. Marks :** | **100** |

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| **Q. No.** | **Questions** | **Course Outcome** | | | **Marks** |
| **PART – A (20 X 1 = 20 MARKS)** | | | | | |
| 1. | Define Permeability. | CO6 | | | 1 |
| 2. | Define Liquefaction. | CO6 | | | 1 |
| 3. | What is Erodibility? | CO3 | | | 1 |
| 4. | What is quicksand? | CO2 | | | 1 |
| 5. | Write a note on Laplace’s equation. | CO3 | | | 1 |
| 6. | What is angle of internal friction? | CO6 | | | 1 |
| 7. | Define Compressibility. | CO6 | | | 1 |
| 8. | What is Shear Strength? | CO5 | | | 1 |
| 9. | Define Darcy’s law. | CO5 | | | 1 |
| 10. | Explain seepage analysis. | CO3 | | | 1 |
| 11. | Define Consolidation test. | CO6 | | | 1 |
| 12. | Define Capillarity. | CO2 | | | 1 |
| 13. | Write a note on Soil plasticity. | CO6 | | | 1 |
| 14. | Draw the soil phase diagrams. | CO1 | | | 1 |
| 15. | Write a note on Mohr-Coulomb failure theory. | CO3 | | | 1 |
| 16. | Write the importance of plasticity index. | CO6 | | | 1 |
| 17. | State the Terzaghi’s theory on bearing capacity. | CO5 | | | 1 |
| 18. | Write notes on Triaxial Compressive strength. | CO5 | | | 1 |
| 19. | Define the neutral stress in soil. | CO5 | | | 1 |
| 20. | What is effective stress? | CO5 | | | 1 |
| **PART – B (10 X 5 = 50 MARKS)**  **(Answer any 10 from the following)** | | | | | |
| 21. | Explain UCC shear test in detail. | | CO5 | 5 | |
| 22. | Explain the factors influencing the soil permeability. | | CO6 | 5 | |
| 23. | Discuss the dry density- water content relationship in detail. | | CO3 | 5 | |
| 24. | Describe in detail the permeability of stratified deposits. | | CO6 | 5 | |
| 25. | Give the importance of soil gradation. | | CO6 | 5 | |
| 26. | Write a note on the procedure for drawing flow nets and uses of flow net. | | CO3 | 5 | |
| 27. | Define soil consistency and their effect on soil properties. | | CO6 | 5 | |
| 28. | Write notes on the pore pressure parameters. | | CO6 | 5 | |
| 29. | Write short notes on Vane shear test. | | CO5 | 5 | |
| 30. | Describe in detail the effective stress and their importance. | | CO5 | 5 | |
| 31. | Explain in detail the factors affecting soil compaction. | | CO2 | 5 | |
| 32. | Explain Atterberg’s Limits in detail. | | CO3 | 5 | |

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| **PART – C (2 X 15 = 30 MARKS)**  **(Answer any 2 from the following)** | | | | |
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| 33. | a. | Give an account on Triaxial compression test. | CO5 | 7 |
| b. | Discuss in detail:  i) One dimensional flow. ii) Two dimensional flow. | CO3 | 8 |
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| 34. | a. | Describe in detail the shear strength of cohesive and cohesion-less soil. | CO5 | 7 |
| b. | Write short notes on:  i) Constant head method. ii) Falling head method. | CO2 | 8 |
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| 35. | a. | Describe in detail AASHTO and UNIFIED (USCS) systems of soil classification. | CO2 | 8 |
| b. | Explain Direct shear test in detail. | CO5 | 7 |