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No. of Printed Pages : 2

BICE-026

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

December, 2015

BICE-026 : GEO-TECHNICAL ENGINEERING – I

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **seven** questions. All questions carry equal marks. Assume missing data, if any. Use of scientific calculator is permitted.*

1. On which type of soil is unconfined compression shear test carried out ? Explain, with the help of Mohr circles, how shear strength parameters are determined in this type of test. *10*

2. What are the basic modes of failure of an earth slope ? Briefly outline the remedial measures that can be undertaken against failure of slope. *10*

3. Draw IS plasticity chart showing various soil groups. Explain how this chart is used in the classification of soils. *10*

4. Draw the line sketch of a triaxial compression test set-up and explain how the various shear strength tests based on drainage conditions can be conducted by this machine. *10*

5. What is plasticity index ? Write the equation of A-line in the plasticity chart. Also explain the significance of A-line. *10*

6. Explain direct shear test and triaxial shear test in detail. *10*

7. Explain Mohr-Coulomb strength envelope in detail. *10*

8. Establish the relationship between bulk unit weight, specific gravity, void ratio and degree of saturation. What do you understand by consistency of soil ? Explain the different states of consistency. *10*

9. Explain the method of slices for finding the factor of safety against slope failure. *10*
