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Roll No. .....

Printed Pages : 2

BT–6 / M–17
GEOTECHNOLOGY–II
Paper–CE–308E

Time allowed : 3 hours] *[Maximum marks : 100*

Note : *Attempt five questions in all, selecting at least one question from each unit.*

Unit–I

1. (a) How is seepage through the embankment and the foundation of an Earth Dam Controlled ? Discuss briefly. 10

   (b) Discuss briefly the criteria for filter design at the d/s end of an Earth Dam. 10

2. Explain Friction circle Method for stability analysis of Finite Slopes. Also discuss the sudden draw-down case for stability analysis. 20

Unit–II

3. (a) Draw sketches to explain the sheeting and bracing adopted for supporting a deep vertical cut. 10

   (b) Describe as to how the forces on struts are estimated for an assumed Pressure distribution behind the sheeting ? 10

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4. Describe the various types of cofferdams with sketches. Also discuss the various design data required for cellular cofferdams. 20

Unit–III

5. A cantilever sheet pile is to support the side of an excavation (vertical) 4m deep in a soil with $c = 0$, $\phi = 30°$ and $\gamma = 18\ T/m^3$. Determine the safe embedment depth of the sheet pile. 20

6. Discuss briefly the Fixed Earth Support method of designing Flexible anchored Sheet Pile Bulkheads in Cohesionless soils by using Blum's equivalent beam method. 20

Unit–IV

7. (a) What type of soils are suitable for lime stabilisation ? Discuss the various reactions that take place and are useful in increasing the strength after compaction of the soil. 10

   (b) Describe the methods of Grouting and Pre-Compression in improving the sub-soil below the foundation level. 10

8. (a) Determine the natural Frequency of a Spring-mass system (without damping) subjected to free vibrations. 10

   (b) Discuss a method of determining the natural frequency of a block foundation subjected to vertical oscillations. 10

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