

**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE  
EXAMINATION, JUNE 2010**

CE 04 802 – CONSTRUCTION ENGINEERING AND MANAGEMENT

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.*

1. (a) What are the objectives of Soil exploration?  
(b) Explain the features of a typical soil investigation report.  
(c) Distinguish between constant head and variable head permeability test.  
(d) Explain  $e$ -log( $P$ ) curve.  
(e) Critically compare the advantages and limitations of static and dynamic penetration tests.  
(f) While explaining the Dynamic Cone Penetration test, discuss how you will interpret DCP results.  
(g) How you will estimate elastic modulus of rock?  
(h) What are the tests you carry out to estimate internal stresses?  

(8 × 5 = 40 marks)
  
2. (a) (i) Explain the terms reconnaissance survey and significant depth in soil exploration.  
(ii) Briefly explain Auger boring of soil exploration.  

*Or*

  
(b) (i) How do you decide the depth and lateral extent of exploration?  
(ii) Write a note on seismic methods of soil exploration.
  
3. (a) (i) What are the tests you carry out to identify the soils in the field? Explain.  
(ii) Compare various types of shear test.  

*Or*

  
(b) (i) Illustrate the effect of grain size on specific surface. How does this influence the engineering behaviour of a soil?  
(ii) Do Unconfined Compression test results over estimate or under estimate the strength of soil? Why?

**Turn over**

4. (a) (i) Explain static cone penetration test.  
(ii) How you will conduct permeability test in the field?

*Or*

- (b) (i) Briefly explain Standard Penetration Test. How you will enter the observations?  
(ii) What is vane shear test? Where it is used? List the merits and demerits of the test.
5. (a) (i) How will you conduct tension test on a rock sample?  
(ii) Compare various deformability tests.

*Or*

- (b) (i) How you will estimate flexure properties of a rock?  
(ii) Explain shear test on rock samples.

[4 × 15 = 60 marks]