No. of Printed Pages : 2

ET-501(A)

B.Tech. Civil (Construction Management) / B.Tech. Civil (Water Resources Engineering)

Term-End Examination

00830

December, 2014

ET-501(A) : SOIL MECHANICS

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any* ***five*** *questions. Assume any missing data suitably. Use of scientific calculator is permitted.*

1. (a) Derive :

$$n = \frac{e}{1+e}$$ 7

(b) Explain the application of Hydrometer analysis in Soil Mechanics. 7

2. (a) How can you measure the permeability of soil in the field ? 7

(b) Explain the procedure of determining shrinkage limit for a soil. 7

3. (a) Explain the Standard Proctor test. 7

(b) Explain the control of compaction of soil in the field. 7

4. (a) Write the definition and explain the interpretation of stream function. 7

(b) What is a Flownet ? Write its characteristics and uses. 7

5. (a) Explain the use of influence charts for vertical stress. 7

(b) Explain a mechanical analogy for consolidation. 7

6. (a) Write a short note on sand drains. 7

(b) Explain unconfined compression test in brief. 7

7. (a) What are the different types of slopes ? Discuss briefly. 7

(b) What are the various factors causing instability of slopes ? 7

8. (a) Find the water content of the soil if

$S = 1{\cdot}0$, $G = 2{\cdot}7$, $e = 0{\cdot}70$ 7

(b) Find the value of e if

$G = 2{\cdot}70$ and $i_{cr} = 1{\cdot}0$. 7

The terms have their usual meanings.
