Reg. No. :

Question Paper Code: 34012

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Fourth Semester

Civil Engineering

01UCE402 – SOIL MECHANICS

(Regulation 2013)

Duration: Three hours   Maximum: 100 Marks

(Nessam chart and data may be permitted)

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Define percentage air voids.

2. Define degree of saturation and shrinkage ratio.

3. What is called quicksand condition?

4. Define coefficient of permeability..

5. What is an isobar?

6. What are the factors which cause the compressibility of clays?

7. State different types of shear failure.

8. Define shear strength of soil?

9. Sketch the different types of slope failures.

10. Define Stability number.

PART - B (5 x 16 = 80 Marks)

11. (a) Derive the relation between γ, G, w, e and γ_w. (16)

Or

(b) Explain the factors affecting compaction of soils. (16)

12. (a) Derive the equation to determine the value co – efficient of permeability 'K' from a falling Head permeability test in detail. (16)

Or

(b) How will you find the permeability of clay in laboratory? Explain the procedure to determine the co-efficient of permeability. (16)

13. (a) Explain Newmark's influence chart and its uses. (16)

Or

(b) Drive an expression for the vertical stress at a point due to line load. Give example of a line load. (16)

14. (a) Briefly explain about direct shear test. State the advantages and limitations of this test. (16)

Or

(b) Describe triaxial compression test in detail. (16)

15. (a) Indicate how the stability of a slope is affected by seepage of water. (16)

Or

(b) Explain the procedure involved in the friction circle method with neat sketch. (16)

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