



Reg. No. :

Name :

Eighth Semester B.Tech. Degree Examination, May 2018
(2013 Scheme)
13.806.3 : REINFORCED EARTH (C)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions.

1. Explain the functions of geosynthetics.
2. Explain Henry Vidal's concept of reinforced earth.
3. Describe geotube.
4. Explain different geocomposites.
5. Explain telescopic method of construction of reinforced earth walls.
(5×4=20 Marks)

PART – B

Answer **any one full** question from **each** Module.

Module – I

6. Explain the various types of geosynthetics with figures specifying their advantages and disadvantages. **20**

OR

7. a) What are the factors affecting the behaviour of reinforced earth ? **10**
b) Explain the concept of expanding soil mass with figures. **10**

Module – II

8. a) Explain tie back wedge analysis. **10**
b) Draw a typical cross section of Reinforced earth wall and mark the features. **10**

OR



9. A reinforced earth wall has the following details. Check the wall for sliding, overturning and bearing capacity failure. Length of reinforcement 7m, fill material is of sand with unit weight 18 kN/m^3 , angle of internal friction 32 degrees, Height of wall 10m. Spacing between the reinforcement is 1m. Topmost reinforcement is 0.5m below ground surface and bottom most reinforcement is 0.5m above base level. The angle of internal friction of sand below the reinforced earth wall is 25 degrees. Allowable soil pressure below the wall is 240 kN/m^2 . For soil behind the reinforced wall unit weight is 17 kN/m^3 and angle of internal friction 29 degrees. Assume the face between the reinforced and unreinforced section is smooth. Assume missing data if any. 20

Module – III

10. a) Find out the pullout capacity of a steel strip of width 150 mm buried in horizontal position at a depth of 4m in sand having unit weight 18 kN/m^3 and angle of internal friction Φ is 30 degrees. For soil to metal interface friction δ as $\tan \delta = 0.7 \tan \Phi$. 10
- b) Explain the different types of facing elements for reinforced earth wall. 10

OR

11. Explain in detail the design procedure for reinforced earth bed. 20

Module – IV

12. a) Make a comparison of Prefabricated vertical drain and encased stone columns. 10
- b) What are the difference between reinforced soil wall and nailed soil wall ? 10

OR

13. a) Explain the application areas of coir geotextiles. 10
- b) Write short note on geocell and geobag. 10
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