FirstRanker.com
Firstranker's choice
www.FirstRanker.com www.FirstRanker.com

Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech (Civil Engineering) (2012 to 2017) (Sem.–7,8)

REINFORCED EARTH AND GEOTEXTILES

Subject Code : BTCE-813

M.Code : 71872

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

Q1. Write briefly :

a. Types of geosynthetics in reinforced earth construction

b. Difference between geocomposite and geogrids

c. Bearing capacity of geosynthetic reinforced foundation

d. Main features for designing with geomembrane

e. Liners used for underground storage tanks

f. Index test for geotextile testing

g. Aspect ratio and its significance

h. Choice of soil for reinforcement

i. Long term Erosion control system

j. Use of Geocomposite as vapour barrier

www.FirstRanker.com

www.FirstRanker.com

FirstRanker.com
Firstranker's choice
www.FirstRanker.com www.FirstRanker.com

SECTION-B

Q2. What do you mean by 'Reinforced earth'? What are its advantages? Discuss in detail.

Q3. In which case is requirement of low elongation of reinforcement most important and why?

a. Vertical reinforced soil wall

b. Steeply inclined reinforced soil embankment

c. Reinforced soil slope in soft clay.

Q4. Can two geotextiles have same coefficients of permeability but different transmissivity and permittivity? Which are two parameters mainly used from the three mentioned for geosynthetics?

Q5. What are the advantages and disadvantages of using geogrid for soil reinforcement in comparison to steel strips for reinforced soil earth walls?

Q6. it is observed that a 15m deep tube well that was supplying drinking water for several years has started giving water with high nitrate content. What steps should be taken to identify the source of contamination?

www.FirstRanker.com

SECTION-C

Q7. What are main functions of geotextiles? Explain with neat sketches.

Q8. Compute the pullout capacity of a unit width of a geotextile sheet of length 3m buried in a horizontal position at a depth of 5m in sand having $\gamma = 18kN/m^3$, $c = 0$, $\Phi = 30°$.For soil-geotextile take $\delta = 0.75\ \phi$.

Q9. Liquid waste is being discharged in to a shallow injection well. The subsoil consists of medium sand of 15m thick with $k = 2 \times 10^{-4}$ m/sec and a porosity of 35% underlain by bed rock. The ground water table is located 5m below the ground surface and hydraulic gradient causing ground water flow is 0.007. A drinking water tube well is located 2.0km away from the injection well on the downstream side. Once the liquid waste percolates vertically down to the ground water table, how much time it will take for the liquid waste to reach the drinking water tube well.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

www.FirstRanker.com