Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **17CE3048** | **Duration :** | **3hrs** |
| **Sub. Name :** | **REINFORCED SOIL STRUCTURES** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Express the historical background of geotextiles and geo synthetic materials. | CO1 | 14 |
| b. | Compare geosynthetics with geopolymers . | CO1 | 6 |
| (OR) | | | | |
| 2. |  | Detail the following terms with neat sketches.  a. Geotextiles.  b. Geogrids.  c. Geomembranes.  d. Geocomposites.  e. Geojutes. | CO2 | 20 |
|  |  |  |  |  |
| 3. | a. | Define geosynthetic clay liners. | CO4 | 6 |
| b. | Define geofoam and its applications. | CO4 | 7 |
| c. | Differentiate geofoam and geogrid with strength aspects. | CO2 | 7 |
| (OR) | | | | |
| 4. | a. | Brief about the Comparison of ply soil with Fiber reinforced soil. | CO5 | 10 |
| b. | Discuss the advantages and disadvantages of fiber reinforced soil. | CO5 | 10 |
|  |  |  |  |  |
| 5. | a. | Discuss the advantages and disadvantages of bamboo and timber facing elements and its properties. | CO3 | 15 |
| b. | List the eco-friendly soil reinforcement materials. | CO2 | 5 |
| (OR) | | | | |
| 6. | a. | Demonstrate Geotextile’s properties and test procedure. | CO3 | 10 |
| b. | Discuss the degradation consideration of geotextile reinforcement. | CO6 | 10 |
|  |  |  |  |  |
| 7. | a. | Assume that a geo textile reaches its half-life elongation in a laboratory weathering device (energy = 517.8 W/m2) in 2000 hr. What is the equivalent lifetime in Philadelphia with a known average exposure energy of 5021MJ/m2 –yr : Joule (J) = watts(W) x seconds(sec). | CO4 | 15 |
| b. | Discuss the properties & uses of geo membrane. | CO5 | 5 |
| (OR) | | | | |
| 8. | a. | List out the applications of any four geosynthetic material with examples. | CO6 | 10 |
| b. | Deduce the demerits of chemical treatment for soil contamination by various agents. | CO6 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Discuss about the various factors affecting behavior and performance of soil reinforcement. | CO1 | 10 |
| b. | Discuss any two case studies on embankments. | CO1 | 10 |