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

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

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| **Code :** | **16CE3021** | **Duration :** | **3hrs** |
| **Sub. Name :** | **GEOPOLYMER AND ITS APPLICATION ON CIVIL ENGINEERING** | **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. | Brief on synthesis of alumino silicate mineral geoploymer. | CO1 | 10 |
| b. | Compare the macro molecular structures of natural silicate and alumino silicates. | CO1 | 10 |
| (OR) | | | | |
| 2. |  | Contrast between X-ray diffraction (XRD) and infrared spectroscopy method (FTIR) in the analysis of alumino silicate mineral. | CO1 | 20 |
|  |  |  |  |  |
| 3. | a. | Discuss in detail the chemical mechanism of geopolymer. | CO1 | 10 |
| b. | Brief on silica fume dissolution in the process of geopolymerisation. | CO2 | 10 |
| (OR) | | | | |
| 4. | a. | Discuss on the composition of flyash and flyash based Geopolymer. | CO1 | 10 |
| b. | Brief on the leaching properties of geopolymer. | CO1 | 10 |
|  |  |  |  |  |
| 5. |  | List the different types of Geopolymer concrete and explain any one of them in detail. | CO1 | 20 |
| (OR) | | | | |
| 6. |  | Discuss on the properties of geoploymer fresh concrete. | CO1 | 20 |
|  |  |  |  |  |
| 7. |  | Discuss in detail the properties of Geopolymer hardened concrete. | CO1 | 20 |
| (OR) | | | | |
| 8. |  | Highlight the suitability of current standards and codes in relation to Geopolymer concrete. | CO1 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Enumerate the application of Geopolymer in ground improvement and slope stability. | CO1 | 20 |