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

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

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| **Code :** | **17CE3029** | **Duration :** | **3hrs** |
| **Sub. Name :** | **CEMENT AND CONCRETE CHEMISTRY** | **Max. marks :** | **100** |

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

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| **Q. No.** |  | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Classify the cements based on its chemical composition, also explain the applications of different types of cement. | CO1 | 20 |
| (OR) | | | | |
| 2. |  | Analyse the different phase systems of cement chemistry. | CO1 | 20 |
|  |  |  |  |  |
| 3. |  | Explain the rheological properties and strength characteristics of cement paste. | CO4 | 20 |
| (OR) | | | | |
| 4. |  | Write short notes on the following:   1. Permeability of cement paste. 2. Interfacial transition zone. | CO5 | 20 |
|  |  |
|  |  |  |  |  |
| 5. |  | Discuss the microstructure properties of hardened cement paste. | CO6 | 20 |
| (OR) | | | | |
| 6. |  | Write short notes on the following   1. Cement paste – aggregate bond 2. Paste – reinforcement bond | CO4 | 20 |
|  |  |  |  |  |
| 7. |  | Explain the following:   1. Effect of w/c ration on age of concrete. 2. Effect of w/c ration on curing and strength of concrete. | CO2 | 20 |
| (OR) | | | | |
| 8. |  | Classify different types of pores in fresh concrete system, also discuss the effect of pores on strength of concrete. | CO3 | 20 |
|  | |  |  |  |
|  | | **Compulsory:** |  |  |
| 9. |  | Explain the different advanced analyzing techniques involved to study the microstructure of cement paste | CO4 | 20 |