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

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

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| **Code :** | **17CE3013** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ADVANCED CONCRETE TECHNOLOGY** | **Max. marks :** | **100** |

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

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| **Q. No.** |  | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Write short notes on the following:   1. Role of Chemical admixtures for improving the workability. 2. High strength nonshrink grouts as repair materials. | CO1 | 20 |
| (OR) | | | | |
| 2. |  | Discuss different types of polymers used for making the concrete and its chemical characteristics. | CO1 | 20 |
|  |  |  |  |  |
| 3. |  | Explain the following:   1. Structure of hardened cement paste. 2. Factors affecting the strength of concrete. | CO2 | 20 |
| (OR) | | | | |
| 4. |  | List the different failure modes of concrete, also discuss the reasons of failure with neat sketches. | CO6 | 20 |
|  |  |  |  |  |
| 5. |  | Describe in detail the following:   1. Corrosion of steel in concrete. 2. Effect of temperature in concrete. | CO4 | 20 |
| (OR) | | | | |
| 6. |  | 1. Examine the factors affecting the durability characteristics of concrete. | CO4 | 20 |
|  |  |  |  |  |
| 7. |  | Explain the procedure to be followed for the design of the self compacting concrete. | CO5 | 20 |
| (OR) | | | | |
| 8. |  | Write short notes on the following   1. Fiber reinforced concrete. 2. Light weight concrete. | CO3 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Design the concrete mix for the following data as per IS 10262:2009  Characteristics strength of concrete – M30  Type of cement – OPC 53  Specific gravity of sand – 2.70  Specific gravity of coarse aggregate – 2.80  Size of coarse aggregate – 20mm  Water absorption – Nil  Grading of fine aggregate – Zone III  Workability - 100mm (slump)  Exposure condition - Moderate | CO5 | 20 |