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

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

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| **Code :** | **15CE2001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **IRRIGATION 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. | Identify the merits and demerits of Irrigation. | CO1 | 4 |
| b. | Derive the relation between Duty and Delta. | CO1 | 6 |
| c. | Discuss about the efficiencies of Irrigation water. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Find the delta of a crop if the duty is 1428 ha/cumec and the base period is 90 days. | CO1 | 4 |
| b. | Explain different methods of irrigation. | CO1 | 16 |
|  |  |  |  |  |
| 3. | a. | Explain sprinkler irrigation with its advantages and disadvantages. | CO2 | 16 |
| b. | Differentiate Drip and Sprinkler irrigation. | CO2 | 4 |
| (OR) | | | | |
| 4. | a. | Illustrate the surface irrigation methods employed in India. | CO2 | 16 |
| b. | Suggest suitable method of irrigation for the sandy soil and explain about it with neat sketch. | CO2 | 4 |
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| 5. | a. | Define canal outlet? Explain different types. | CO1 | 4 |
| b. | A channel section has to be designed for the following data : (using Lacey’s theory)  Discharge = 20 cumecs  Mean diameter of the silt particle = 0.29  Side slope = ½ : 1 | CO1 | 16 |
| (OR) | | | | |
| 6. | a. | List out advantages and disadvantages of Lining in canals. | CO1 | 4 |
| b. | Recall the measures that should be carried out to maintain a lined channel in perfect condition. | CO3 | 4 |
| c. | Design an irrigation canal in an clayey alluvial soil to carry a discharge of 40 cumecs. Assume N=0.025, canal side slope 1:1, longitudinal slope 1 in 5000. Also check for the critical velocity ratio, allowable CVR is 0.9 to 1.1 (use Kennedy’s theory). Find also the bed slope of the channel. | CO1 | 12 |
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| 7. | a. | Illustrate the types of spillways and explain them with neat diagrams. | CO3 | 14 |
| b. | Contrast the suitable site for a dam. | CO3 | 6 |
| (OR) | | | | |
| 8. | a. | Explain measures adopted to prevent water logging of irrigated land. | CO3 | 10 |
| b. | Explain the Components of Diversion head work with a neat diagram. | CO3 | 10 |
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|  | | **Compulsory**: |  |  |
| 9. | a. | Enumerate different types of Dams with its structure details and structural behavior. | CO3 | 15 |
| b | Suggest and explain the type of cross drainage works for the canal is crossing below the bed of natural stream. | CO3 | 5 |