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



**End Semester Examination – Nov / Dec – 2019**

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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. | Summarize in detail the methods of improving duty. | CO1 | | 10 |
| b. | The base period, intensity of irrigation and duty of various crops under a canal system are given in the table below. Find the reservoir capacities if the canal losses are 20% and reservoir losses are 12%.   |  |  |  |  | | --- | --- | --- | --- | | Crop | Base period (days) | Duty at the field  (hectares/m3) | Area under the crop (hectares) | | Wheat | 120 | 1800 | 4800 | | Sugarcane | 360 | 800 | 5600 | | Cotton | 200 | 1400 | 2400 | | Rice | 120 | 900 | 3200 | | Vegetables | 120 | 700 | 1400 | | CO1 | | 10 |
| **(OR)** | | | | | |
| 2. | a. | Describe the drawbacks in Kennedy’s theory and Lacey’s Theory. | CO3 | | 6 |
| b. | In the design of a trapezoidal canal, the following dimensions  are obtained:  Side slopes = ½ H: 1 V  Bedwidth = 21m  Depth = 1.5m  Bed slope = 2.25 x 10 -3  Assume n = 0.022. Using Kennedy’s theory, find whether the  chosen canal section is satisfactory. | CO3 | | 14 |
|  |  |  |  | |  |
| 3. | a. | Investigate the design procedure of Lacey’s theory applied to channel design. | CO2 | | 8 |
| b. | Design a channel section for the following data:  Discharge = 30 cumecs  Silt factor = 1.0  Side slope = ½ : 1  Determine the longitudinal slope also. | CO2 | | 12 |
| **(OR)** | | | | | |
| 4. | a. | Explain the different types of canal linings in detail. | CO1 | | 12 |
| b. | Explain Lift irrigation, the working principles, advantages and disadvantages. | CO1 | | 8 |
|  |  |  |  | |  |
| 5. | a. | Write short notes on Subsurface irrigation. | CO2 | | 6 |
| b. | Expalin in detail the working principle, advantages and disadvantages of Drip Irrigation with neat sketch. | CO2 | | 14 |
| **(OR)** | | | | | |
| 6. | a. | Differentiate between Weirs and barrages. | CO3 | | 10 |
| b. | Paraphrase on Sprinkler irrigation. | CO1 | | 10 |
|  |  |  |  | |  |
| 7. | a. | Explain various Canal regulation structures with neat sketch. | CO3 | | 10 |
| b. | Investigate the types of spillways and explain them with neat diagrams. | CO3 | | 10 |
| **(OR)** | | | | | |
| 8. | a. | Describe the different types of Dams, their structure and components with neat sketch. | | CO3 | 14 |
| b. | Differentiate between gravity dam and embankment dam. | | CO3 | 6 |
|  | | **Compulsory**: | |  |  |
| 9. | a. | Explain Water Logging with its principle causes and measures  adopted to prevent water logging of irrigated land. | | CO3 | 15 |
| b. | Compile various Reclamation of saline land. | | CO3 | 5 |