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



**End Semester Examination – Nov/Dec – 2017**

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| **Code :** | **17CE3061** | **Duration :** | **3hrs** |
| **Sub. Name :** | **PRINCIPLES OF INTEGRATED WATER RESOURCES MANAGEMENT** | **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. | What do you understand by sustainable development? | CO1 | 5 |
| b. | Why is a small watershed an ideal unit for planning soil and water conservation activities? | CO1 | 15 |
|  | c. | Describe the role of forests in soil and water conservation. | CO3 |  |
| (OR) | | | | |
| 2. | a. | How water pricing is fixed? What are the concepts and methods available? | CO3 | 14 |
| b. | What are the components of full water valves? | CO3 | 6 |
|  |  |  |  |  |
| 3. | a. | What is meant by environmental flows? | CO6 | 4 |
|  | b. | Explain the different components of Universal Soil Loss Equation. | CO4 | 8 |
|  | c. | Sand mining is harmful for water-environment. Explain. | CO4 | 8 |
| (OR) | | | | |
| 4. | a. | What are the different sources of water pollution? | CO6 | 4 |
|  | b. | What are the barriers in implementing IWRM in the irrigation sector? | CO3 | 8 |
|  | c. | How is environment affected by water use in other sectors? | CO6 | 8 |
|  |  |  |  |  |
| 5. | a. | Explain the need for rainwater harvesting. | CO4 | 4 |
|  | b. | With the help of a sketch describe any one of the techniques used for roof top rainwater harvesting with storage for domestic use. | CO4 | 8 |
|  | c. | What do you understand by ‘green water’ and ‘blue water’? | CO2 | 8 |
| (OR) | | | | |
| 6. | a. | What are the advantages of conjunctive use of surface and groundwater? | CO3 | 6 |
|  | b. | Explain the concept of virtual water and its trades. | CO2 | 8 |
|  | c. | Give a list of important water-borne or water related diseases. | CO6 | 6 |
|  |  |  |  |  |
| 7. | a. | Explain the Public – Private Partnership in water management. | CO5 | 14 |
|  | b. | Briefly explain PPP with a case study. | CO5 | 6 |
| (OR) | | | | |
| 8. |  | What are the risks and reliability analysis pertaining to projects in water resources? Explain. | CO3 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | What is integrated water resources management? | CO1 | 10 |
|  | b. | What are gender approaches in IWRM? Give a case study to explain the above. | CO1 | 10 |

ALL THE BEST