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

**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – April/May – 2017**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **14CE3026** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INTRODUCTION TO IWRM** | **Max. marks :** | **100** |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Q. No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. | a. | Define IWRM. | CO1 | 4 |
| b. | What are the four principles of IWRM based on Dublin Conference? | CO1 | 8 |
| c. | Give a short note on global water crisis. | CO2 | 8 |
| (OR) | | | |
| 2. | a. | Distinguish between ‘blue’ and ‘green’ water. | CO2 | 6 |
| b. | What are the components generally found in grey water? | CO1 | 6 |
| c. | With the help of a sketch, give one treatment method for grey water. | CO1 | 8 |
| 3. | a. | What is sustainable development? | CO2 | 6 |
|  | b. | Give short note on impact of climate change on water resources. | CO2 | 6 |
|  | c. | What do you understand by ‘ecosystem’ or ‘holistic’ approach? | CO2 | 8 |
| (OR) | | | |
| 4. | a. | Define a small watershed. | CO1 | 6 |
|  | b. | List five water related environmental problems. | CO1 | 8 |
|  | c. | Give a short note on ‘environmental flows’. | CO1 | 6 |
| 5. | a. | How will you forecast a flood? | CO1 | 8 |
|  | b. | Describe different types of droughts. | CO1 | 6 |
|  | c. | Write a short note on reservoir sedimentation. | CO1 | 6 |
| (OR) | | | |
| 6. | a. | Which are the main human activities contributing to pollution in the country? | CO2 | 6 |
|  | b. | List out half a dozen water-borne/water-related diseases. | CO2 | 6 |
|  | c. | Name a few methods used for treating sewage water. | CO2 | 8 |
| 7. | a. | What are the different methods used for water conservation? | CO2 | 6 |
|  | b. | With the help of a sketch, give a technique for roof-top rain-water harvesting. | CO2 | 8 |
|  | c. | Give two methods used for artificial recharge of groundwater. | CO2 | 6 |
| (OR) | | | |
| 8. | a. | Give a short note on conjunctive use of surface and groundwater. | CO3 | 6 |
|  | b. | Present a case study of one inter-basin transfer of water. | CO3 | 7 |
|  | c. | What are the sanitation measures most relevant to a city? | CO3 | 7 |
|  | | **Compulsory:** |  |  |
| 9. | a. | What is meant by virtual water? | CO3 | 6 |
|  | b. | Give the advantages and disadvantages of PPP in the Indian context. | CO3 | 8 |
|  | c. | Water trade using trucks have several limitations. Explain. | CO2 | 6 |

ALL THE BEST