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**End Semester Examination – Apr/May – 2018**

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| **Code :** | 17AG1005 | **Duration :** | **3hrs** |
| **Sub. Name :** | IRRIGATION WATER MANAGEMENT | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Course Outcome** | **Marks** |
|  | **PART-A(20X1=20 MARKS)** | | |
| 1. | Define hydrological cycle. | CO1 | 1 |
| 2. | What is the use of weirs in dam? | CO2 | 1 |
| 3. | Differentiate between soil texture and structure. | CO3 | 1 |
| 4. | Define void ratio. | CO1 | 1 |
| 5. | What are the factors affecting the infiltration rate of soil. | CO3 | 1 |
| 6. | Define water holding capacity of soil. | CO3 | 1 |
| 7. | Write the methods of finding soil moisture. | CO1 | 1 |
| 8. | Distinguish between evaporation and transpiration. | CO2 | 1 |
| 9. | Write the influencing of crop stages on crop co-efficient | CO1 | 1 |
| 10. | A stream of 135 litre per seconds was diverted from a canal and 100 litre per seconds were delivered to field. Find the application efficiency. | CO1 | 1 |
| 11. | State the formula for depth of irrigation calculation. | CO2 | 1 |
| 12. | List the devices used to estimate the soil moisture. | CO2 | 1 |
| 13. | What are factors influcencing the water relations of plants and their growth? | CO1 | 1 |
| 14. | Write the formula to estimate crop evapotranispiration using crop co-efficients. | CO3 | 1 |
| 15. | Define effective rainfall. | CO2 | 1 |
| 16. | List various sources of irrigation | CO2 | 1 |
| 17. | Define available water. | CO1 | 1 |
| 18. | Define water application efficiency. | CO3 | 1 |
| 19. | What is meant by Water use efficiency? | CO3 | 1 |
| 20. | What is the minimum pressure required to operate drip and sprinkler? | CO3 | 1 |

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|  | **PART B(10 X 5= 50 MARKS)**  **(Answer any 10 from the following)** | | |
| 21. | Write the need and scope of irrigation. | CO1 | 5 |
| 22. | Differentiate between net irrigated and gross irrigated area. | CO3 | 5 |
| 23. | How you will measure reference evapotranspiration using Class A Pan evaporimenter. | CO2 | 5 |
| 24. | What are the factors to be affected for the water requirement of the crops? | CO1 | 5 |
| 25. | Differentiate between field capacity and permanent wilting point. | CO3 | 5 |
| 26. | Define evapotranspiration. | CO2 | 5 |
| 27. | List the advantages of drip irrigation | CO3 | 5 |
| 28. | Write the demerits of sprinkler irrigation | CO3 | 5 |
| 29. | Find the delta for a crop if the duty for a base period of 110 days is 1400 ha/ cumec. | CO1 | 5 |
| 30. | What is meant by CADA? | CO2 | 5 |
| 31. | Illustrate the possibilities of water losses in unlined canal. | CO2 | 5 |
| 32. | What are the factors affecting the intake of water? | CO2 | 5 |

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|  | **PART C(2 X 15= 30 MARKS)**  **(Answer any 2 from the following)** | | | |
| 33. | a. | Explain different methods of surface irrigations. | CO1 | 7 |
| b. | Explain the water budget in India. | CO2 | 8 |
| 34. | a. | A stream of 135 lps was diverted from a canal and 100 lps were delivered to the field. An area of 1.6 ha was irrigated in 8 hrs. The effective depth of rootzone was 1.8m. The runoff loss in the field was 432 m3. The depth of water penetration varied linearly from 1.8m at the head end of the field to 1.2 m at the tail end. The available moisture holding capacity of the soil is 20cm / m depth of soil. Determine the water conveyance efficiency, application efficiency, storage efficiency and distribution efficiency. The irrigation was started at a moisture extraction level of 50% of the available moisture. | CO3 | 10 |
| b. | Illustrate effects of water logging. | CO3 | 5 |
| 35. | a. | Table below gives the details for a certain crop. Using Blaney-criddle equation and a crop factor k= 0.75. Determine the following (i) consumptive use, (ii) consumptive irrigation requirement (iii) field irrigation requirement, if water application efficiency is 0.7.   |  |  |  |  | | --- | --- | --- | --- | | Month | Temperature in ˚C (t) | Daytime sunshine hr (p) | Useful R.F in cm (RE) | | November | 19.0 | 7.19 | - | | December | 16.0 | 7.15 | 1.2 | | January | 12.5 | 7.30 | 0.8 | | February | 13.5 | 7.03 | - | | CO1 | 10 |
| b. | Write the concept of warabandhi system. | CO2 | 5 |