Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**PDDC - SEMESTER–VII • EXAMINATION – WINTER • 2014**

**Subject Code: X 70605** **Date: 05-12-2014**

**Subject Name: Irrigation Water management**

**Time: 10:30 am - 01:00 pm** **Total Marks: 70**

**Instructions:**

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

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|---|---|---|---|
| **Q.1** | **(a)** | Name the components of sprinkler irrigation system. Discuss the components of the system in detail. | **07** |
| | **(b)** | What are the factors influencing the design capacity of a drip irrigation system? | **07** |
| **Q.2** | **(a)** | Explain the importance of Community participation in irrigation water management. | **07** |
| | **(b)** | Calculate the capacity of a sprinkler system to apply water at a rate of 1.25 cm/hr. Two sprinkler lines 175 m long each with 15 sprinklers are spaced at 11.5 m interval on each line. The sprinkler lines are spaced at 18 m interval. | **07** |
| | | **OR** | |
| | **(b)** | A stream flowing of 150 l/s was diverted from a canal and 115 l/s was delivered to the field. Find the conveyance efficiency of the canal. The depth of water penetration in the field varied linearly from 1.8 m at the head end to 1.1 meter at the tail end. Find the distribution efficiency at the field. | **07** |
| **Q.3** | **(a)** | Explain the factors that influences land leveling requirement? | **07** |
| | **(b)** | Give difference between Border strip Irrigation and Check basin Irrigation. | **07** |
| | | **OR** | |
| **Q.3** | **(a)** | Explain surface irrigation and sub surface irrigation. | **07** |
| | **(b)** | Explain how RS & GIS can be used in the field of irrigation engineering. | **07** |
| **Q.4** | **(a)** | Write a note on "Reclamation of saline soils by leaching method". | **07** |
| | **(b)** | Write short note on irrigation scheduling. | **07** |
| | | **OR** | |
| **Q.4** | **(a)** | Explain the following:<br>i) Water conveyance efficiency iii) Water storage efficiency<br>ii) Water application efficiency iv) Water distribution efficiency | **07** |
| | **(b)** | What problems are associated with usage of poor quality irrigation water? | **07** |
| **Q.5** | **(a)** | Describe in detail the operation & maintenance of canal irrigation system. | **07** |
| | **(b)** | Write a note on measures for prevention of water logging. | **07** |
| | | **OR** | |
| **Q.5** | **(a)** | Discuss in detail Classification of Drainage. | **07** |
| | **(b)** | Explain in detail the parameters of evaluating the performance of canal irrigation system. | **07** |

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