Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – III • EXAMINATION – SUMMER • 2014

Subject code: 731202 **Date: 05-06-2014**

Subject Name: Water Use Management

Time: 02:30 pm - 05:00 pm **Total Marks: 70**

Instructions:

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

Q.1	**(a)**	Discuss briefly the factors affecting the choice of the method of irrigation and briefly explain Furrow method.	**07**
	(b)	Give advantages and disadvantages of surface and sub-surface irrigation.	**07**
Q.2	**(a)**	Describe the criteria which governs the layout of the sprinkler system.	**07**
	(b)	What do you understand by drip irrigation? Discuss component parts of drip irrigation.	**07**
		OR	
	(b)	Discuss the hydraulics of flow in the drip irrigation method.	**07**
Q.3	**(a)**	Draw sketch and describe briefly the working of a sprinkler irrigation system.	**07**
	(b)	On an area of 20 ha great millet is to be irrigated by a sprinkler system. Moisture use rate is 5 mm per day and irrigation is done after 10 day interval. Time taken to complete watering is 12 days. The system works for 16 hours each day. Irrigation efficiency is 68%. Calculate discharge capacity of the pump.	**07**
		OR	
Q.3	**(a)**	With the help of sketch , explain the design procedure for drip irrigation.	**07**
	(b)	Briefly explain types/classification of sprinkler system.	**07**
Q.4	**(a)**	Define and explain consumptive use of water. Discuss the various factors which affect it.	**07**
	(b)	Explain the various methods of measurement of irrigation water.	**07**
		OR	
Q.4	**(a)**	Explain in brief, drainage requirements in an irrigation command area. List the essential requirements of a drain.	**07**
	(b)	Discuss methodology for management of waterlogged and saline and alkaline soils.	**07**
Q.5	**(a)**	Describe automation and control and regulation of canals.	**07**
	(b)	Discuss command area development in detail.	**07**
		OR	
Q.5	**(a)**	What is waterlogging? What are the ill-effects of waterlogging?	**07**
	(b)	Explain soil water relationship in detail.	**07**

****