Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – III • EXAMINATION – SUMMER • 2013

Subject code: 731202 **Date: 15-05-2013**

Subject Name: Water Use 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.**

Q.1	**(a)**	Classify the methods of irrigation. Discuss irrigation scheduling.	**07**
	(b)	What are the special uses of sprinkler irrigation?	**07**
Q.2	**(a)**	Classify sprinkler system. Discuss their relative merits and demerits.	**07**
	(b)	What are the types of soils, crops and terrain, which are suitable for drip irrigation? Discuss the limitations of this method.	**07**
		OR	
	(b)	Explain with a sketch, the component parts of drip irrigation system.	**07**
Q.3	**(a)**	Describe conjunctive use of surface water & ground water.	**07**
	(b)	Intensity of irrigation is 20% for wheat and 10% for rice; the culturable command area of a distributor is 6000 ha. The Kor period for wheat is 3 weeks and for rice 2 weeks. Determine the total outlet discharge requires excluding losses in the channel. Assume depth for Kor watering as 9 cm and 25 cm for wheat and rice respectively.	**07**
		OR	
Q.3	**(a)**	Define and explain succession cropping and inter cropping.	**07**
	(b)	Explain the different methods used for determination of consumptive use of water.	**07**
Q.4	**(a)**	What are the main objectives of providing drain? How will you classify drains? Compare surface drains versus subsurface drains.	**07**
	(b)	Explain 'Soil Fertility Management' in detail.	**07**
		OR	
Q.4	**(a)**	What are the reasons for formation of saline and alkaline soils? How these soils can be reclaimed?	**07**
	(b)	Determine the drain spacing for an area where impermeable bed exists 4.5m below ground surface. The water table should be 0.5m below the ground level. The rate of discharge per unit area of land surface is 0.72cm per day and coefficient of permeability is 1.25 cm/hr.	**07**
Q.5	**(a)**	Discuss operation and management of irrigation project.	**07**
	(b)	Explain automation, control and regulation of canals.	**07**
		OR	
Q.5	**(a)**	Explain soil water relationship in detail.	**07**
	(b)	Discuss command area development in details.	**07**

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