Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2170609 **Date: 04/05/2017**

Subject Name: Irrigation Engineering

Time: 02.30 PM to 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)**	What do you understand by total planning concept (scope) of irrigation project?	**07**
	(b)	Explain the terms (i) Duty (ii) Delta and (iii) Base period. Derive the relation between Duty, Delta and Base period.	**07**
Q.2	**(a)**	Discuss the causes and remedial measures of water logging	**07**
	(b)	Write short note on 1). Silt Ejector 2).Divide wall	**07**
		OR	
	(b)	Explain the salient features of the drip irrigation system. What are the advantages and disadvantages of the drip irrigation?	**07**
Q.3	**(a)**	Describe Bligh's Creep Theory for the design of weirs over pervious foundation.	**07**
	(b)	Enlist various forces acting on gravity dam as per IS: 6512 and discuss in detail uplift and wave pressure.	**07**
		OR	
Q.3	**(a)**	What is consumptive use of water? Describe any one method of determining the consumptive use of water.	**07**
	(b)	The depth of the downstream sheet pile of a concrete slope weir is 8m. If the safe exit gradient is 1/6, what should be the minimum length (b) of the impervious concrete floor required for the seepage head of 6m.	**07**
Q.4	**(a)**	Describe Kennedy's theory for the design of irrigation channel in alluvial soil.	**07**
	(b)	Write short note on spillway crest gates.	**07**
		OR	
Q.4	**(a)**	Give classification of irrigation canals in detail.	**07**
	(b)	What is canal fall? Why is it necessary to provide a fall in a canal? Explain with sketch Ogee fall.	**07**
Q.5	**(a)**	Design a channel by Lacey's theory for 40 cumecs capacity. The side slopes may be 1:1. The average size of the bed material may be taken as 0.8mm.	**07**
	(b)	Describe briefly 'ogee spillway'.	**07**
		OR	
Q.5	**(a)**	Discuss various methods of assessment of irrigation water.	**07**
	(b)	Write a short note on the canal escape.	**07**

****