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

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 170602 **Date: 02/05/2017**

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)**	Explain surface irrigation methods (i) Border irrigation (ii) Basin irrigation (iii) Furrow irrigation method	**07**
	(b)	Describe layout of barrage and discuss each component	**07**
Q.2	**(a)**	Give difference between kennedy and laceys method of designing canal in alluvial soil	**07**
	(b)	Design canal as per lacey's method when Q =24 cumec and f =1.1.	**07**
		OR	
	(b)	During transplantation of certain crop which takes 15 days and total depth 70 cm on field during the transplantation period 15 days . rain starts falling and about 8 cm of rain is being utilized to fulfill the crop demand . find the duty of irrigation water required for crop during transplantation (a) assuming 20% water losses and duty of water at head of water course(ii) Find duty of water at head of distributaries assuming 10% losses from distributay head to the water course head	**07**
Q.3	**(a)**	Draw typical L section of the canal showing different level	**07**
	(b)	Explain causes of water logging and describe leaching	**07**
		OR	
Q.3	**(a)**	Explain benefits and ill effects of irrigation	**07**
	(b)	Explain (i) Distribution efficiency (ii) Application efficiency (iii) Project efficiency	**07**
Q.4	**(a)**	What is balancing depth ? describe how it is economical ?	**07**
	(b)	Enlist different types of fall and draw sketch of sarda type fall	**07**
		OR	
Q.4	**(a)**	With sketch describe head regulator and cross regulator	**07**
	(b)	Which type of structure will be proposed when CBL of canal is higher than HFL of natural drain? Draw sketch and describe the structure	**07**
Q.5	**(a)**	Explain (i) Canal escape and (ii) Super passage	**07**
	(b)	Why canal falls are provided ? explain glacis type fall	**07**
		OR	
Q.5	**(a)**	Explain sprinkler irrigation method with its component	**07**
	(b)	Define Duty and Delta. Derive relationship between duty and delta	**07**

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