Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC- SEMESTER–VI • EXAMINATION – SUMMER 2017

Subject Code: X60603 **Date: 02/05/2017**

Subject Name: Irrigation Engineering

Time: 10.30AM to 01.00PM **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)	Define the term 'Irrigation' and discuss various irrigation methods in brief.	07
	(b)	Explain irrigation efficiency in detail.	07
Q.2	(a)	Give the difference between sprinkler irrigation and drip irrigation.	07
	(b)	What do you mean by Duty and Delta. Derive relation between duty and delta for a given base period.	07
		OR	
	(b)	After how many days, the irrigation water should be applied to the land to ensure efficient irrigation for the following conditions. Field capacity of soil=25%, Permanent wilting zone=15%, Dry density of soil=1.5g/cm^3, Effective depth of root zone=0.75m, Daily consumptive use of water= 8mm, Readily available moisture=80% of available moisture	07
Q.3	(a)	What is consumptive use of water? Describe any two methods for determining the consumptive use of water.	07
	(b)	Give short note on Khosla's theory.	07
		OR	
Q.3	(a)	Define phreatic line. How to locate phreatic line on an earthen dam?	07
	(b)	Describe different forces acting on a gravity dam.	07
Q.4	(a)	What is 'canal fall'? Where canal fall is necessary in a canal work.	07
	(b)	Sketch the layout of a typical diversion head works and describe the functions of various component of headwork.	07
		OR	
Q.4	(a)	Give the difference between Lacey's theory and Kennedy's theory.	07
	(b)	Discuss advantages and disadvantages of canal lining.	07
Q.5	(a)	Discuss the causes of water logging and its remedial measures.	07
	(b)	Describe types of canal and explain any two in brief.	07
		OR	
Q.5	(a)	Define: (1) Aqueduct, (2) Syphon Aqueduct, (3) Supper passage, (4) Canal syphon, (5) Escape, (6) Canal outlet, (7) Spillway.	07
	(b)	Discuss the different types of canal escapes in brief.	07

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