Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

	•	ME – SEMESTER II– EXAMINATION – WINTER - 2016 t Code: 2723302 Date: 18/11/20	16
Tiı	me: 2 tructio 1. 2.	t Name: Hydro System Engineering 2:30 pm to 5:00 pm Total Marks: ons: Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks	70
Q.1	(a) (b)	Explain the applications of system engineering in the field of water resources. Discuss the objective function of water resources project.	0' 0'
Q.2	(a) (b)	Discuss the assumptions and limitations of linear programming.  Define the following terms:  (i)Basic feasible solution (ii)Slack variable  (iii) Local maximum and (iv)Global minimum  OR	0° 0°
	<b>(b)</b>	Describe the various optimization techniques with their merits and demerits.	0′
Q.3	(a) (b)	Discuss "Simulation Modeling" in detail. Explain Simplex Algorithm with a flow chart.  OR	0': 0':
Q.3	(a) (b)	Differentiate between deterministic and stochastic programming. Explain Gomory's cutting plane method.	0′ 0′
Q.4	(a) (b)	Explain Big M method in detail.  Discuss how non-linear function can be made linear.  OR	0′: 0′:
Q.4	(a) (b)	Discuss dynamic programming and its characteristics with merits and demerits. Discuss Kuhn-Tucker conditions for optimizing non-linear problem.	0' 0'
Q.5	(a) (b)	Write short note on "Artificial Neural Network". Write short note on "Hybrid Techniques".  OR	0′: 0′:
Q.5	(a) (b)	Write short note on "Fuzzy Logic" Write short note on "System Engineering".	0' 0'

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