

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
ME - SEMESTER- 2 • EXAMINATION – WINTER - 2023

Subject Code:3723302

Date: 06 Jan 2024

Subject Name:Hydro system Engineering

Time:10:30 AM TO 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.

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|------------|-----|---|-----------|
| Q.1 | (a) | Discuss Engineering applications of optimization. | 07 |
| | (b) | Discuss how non-linear function can be linear. | 07 |
| Q.2 | (a) | Define and explain: 1) Slack Variable. 2) Surplus Variable. 3) Objective function. | 07 |
| | (b) | Write short note on Artificial Neural Network. | 07 |
| OR | | | |
| | (b) | Discuss the assumptions made in Linear Programming. | 07 |
| Q.3 | (a) | Explain the Primal-Dual concept of L.P. Model. | 07 |
| | (b) | What do you mean by System Analysis? Discuss. | 07 |
| OR | | | |
| Q.3 | (a) | State and explain merits and demerits of Dynamic Programming | 07 |
| | (b) | Write short note on Simulation Modeling | 07 |
| Q.4 | (a) | Explain how the Linear Programming problem is formulated. | 07 |
| | (b) | Explain the graphical method to solve Linear programming problem. | 07 |
| OR | | | |
| Q.4 | (a) | Differentiate between Deterministic and Stochastic Programming | 07 |
| | (b) | Write short note on Hybrid techniques. | 07 |
| Q.5 | (a) | Discuss the steps involved in solution of Linear programming problem by Simplex method. | 07 |
| | (b) | Discuss the Objective function of water resources project. | 07 |
| OR | | | |
| Q.5 | (a) | Describe various components of simulation. | 07 |
| | (b) | Discuss the Kuhn-Tucker conditions for non-linear programming. | 07 |