Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2023

Subject Code:3172212 Date:08-12-2023

Subject Name: Mine 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.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Define the following terms in PERT: a) Optimistic Time Estimate b) Pessimistic Time Estimate c) Most Likely Time Estimate	**03**
	(b)	Write short notes on Assignment problem and its application for mineral industry.	**04**
	(c)	What do you mean by network technique? Explain its objectives and advantages.	**07**
Q.2	**(a)**	Discuss the application of linear programming.	**03**
	(b)	What does a critical path actually signify? In what ways does it differ from any other path?	**04**
	(c)	Define inventory. Explain the basic characteristics of an inventory system with advantages.	**07**
		OR	
	(c)	Discuss the factors influencing creativity, techniques and alternate ideas.	**07**
Q.3	**(a)**	How to calculate average and expected time in PERT.	**03**
	(b)	What is the need of dynamic programing for mineral industry? Write some methods for solving dynamic programming problem.	**04**
	(c)	Discuss the types of Transportation models and its variations.	**07**
		OR	
Q.3	**(a)**	Write the limitations of PERT.	**03**
	(b)	Differentiate between CPM and PERT.	**04**
	(c)	Write short notes on following:- i. Necessity for inventory control ii. Functions performed by inventory	**07**
Q.4	**(a)**	What do you understand by minimal spanning tree network model?	**03**
	(b)	Discuss graphical method of solving Linear Programming Problems.	**04**
	(c)	Explain the rules to be followed while constructing a network.	**07**
		OR	
Q.4	**(a)**	Define: (i) Dummy activity (ii) Critical activity (iii) Slake time	**03**
	(b)	Write the assumption of EOQ model.	**04**
	(c)	Compare system, sub-system and system environment in detail.	**07**

Q.5	**(a)**	Write the scope and limitations of simulation.	**03**
	(b)	How will you define transportation model. Explain its application in mineral industry.	**04**
	(c)	Discuss the Creative aspects of planning and design.	**07**

OR

Q.5	**(a)**	Write a short note on Primal and Dual Problem.	**03**
	(b)	What is a linear programming model? Also write its assumptions.	**04**
	(c)	Discuss Monte-Carlo simulation system.	**07**

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