Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER- VII EXAMINATION-SUMMER 2023
Subject Code: 3172212   **Date: 26/06/2023**
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)	Discuss the concepts of system, sub-system and system environment.	03
	(b)	Describe the use of transportation model.	04
	(c)	Explain the procedure for calculating the project completion time in case of probability is given.	07
Q.2	(a)	Discuss the application of assignment problem.	03
	(b)	Explain the rules to be followed while constructing a network.	04
	(c)	Explain the step by step procedure of solving a LPP using graphical method.	07
		OR	
	(c)	Explain the step by step procedure of solving a LPP using simplex method.	07
Q.3	(a)	Discuss the relationship regarding primal and dual solution.	03
	(b)	Enlist the different assumptions of LPP. Discuss each assumption.	04
	(c)	List the factors influencing creativity. Also explain the significance of creativity in an organization.	07
		OR	
Q.3	(a)	Discuss the different types of solutions in transportation models.	03
	(b)	Differentiate assignment problem with transportation problem.	04
	(c)	Draw algorithm to solve the assignment problem.	07
Q.4	(a)	Define CPM. Discuss the system of CPM.	03
	(b)	Describe the difficulties encountered in the construction of CPM chart and the use of dummy operations.	04
	(c)	Explain the advantages and limitations of CPM.	07
		OR	
Q.4	(a)	Discuss the three time estimates and expected time for PERT.	03
	(b)	Differentiate between CPM and PERT.	04
	(c)	Explain the advantages and limitations of PERT.	07
Q.5	(a)	Discuss the scope and limitation of simulation.	03
	(b)	Describe the shortest route and minimal spannial tree problems.	04
	(c)	Explain Monte-Carlo simulation procedure. Also discuss its applicability with suitable examples.	07
		OR	
Q.5	(a)	Discuss the objective of inventory management.	03
	(b)	Describe the types of simulation process.	04
	(c)	Explain EOQ model with quantity discount.	07

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