Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) EXAMINATION – SUMMER 2024

Subject Code: 3172208 Date:24-05-2024

Subject Name: Mine Planning

Time:02:30 PM TO 05:00 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 life of mine.	**03**
	(b)	Explain slope stability analysis and design methodology in brief.	**04**
	(c)	Explain the various legal aspects of mine closure planning.	**07**
Q.2	**(a)**	Define haul road.	**03**
	(b)	Explain various types of reserve.	**04**
	(c)	Explain the ultimate pit configuration and its determination.	**07**
		OR	
	(c)	Explain how cut-off grade is determined.	**07**
Q.3	**(a)**	Define the term Reserve.	**03**
	(b)	Discuss the technical and economic information required for planning.	**04**
	(c)	Explain the role of bench geometry and mine layouts in surface mines.	**07**
		OR	
Q.3	**(a)**	What is optimization of mine design?	**03**
	(b)	Explain the mining revenues and costs, and their estimation.	**04**
	(c)	Explain the determination of mine size and Taylors mine life rule.	**07**
Q.4	**(a)**	Define Probable Ore Reserve.	**03**
	(b)	Draw a neat sketch of bench geometry and explain it.	**04**
	(c)	Narrate the preparation and economic evaluation for underground coal mine planning.	**07**
		OR	
Q.4	**(a)**	Define mine closure.	**03**
	(b)	Discuss the mine system and sub-system of underground coal mining with necessary sketch.	**04**
	(c)	Write a note on legal aspects and technical parameters are considered for mine closure.	**07**
Q.5	**(a)**	Define stoping.	**03**
	(b)	Discuss Mine economics.	**04**
	(c)	Explain any two method of ore reserve estimation with sketch.	**07**
		OR	
Q.5	**(a)**	Define revenue and cost.	**03**
	(b)	How do we maximize income and minimize the cost in mining?	**04**
	(c)	Give a brief note on production planning for underground metal mining.	**07**

****