GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2022

Subject Code:3162202   **Date:01/06/2022**
Subject Name:Underground Metalliferous Mining
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 raise and winze.	**03**
	(b)	List the applicability condition for the room and pillar mining method.	**04**
	(c)	Explain the factors affecting the choice of underground metal mining method.	**07**
Q.2	**(a)**	Define open stoping method.	**03**
	(b)	Classify stoping methods.	**04**
	(c)	Explain shrinkage stopping method and its applicability.	**07**
		OR	
	(c)	Differentiate between sub-level caving and sub-level stoping.	**07**
Q.3	**(a)**	Explain the large-diameter blasthole method.	**03**
	(b)	Write a note on supported stoping method.	**04**
	(c)	Explain the sublevel stoping method with a suitable diagram.	**07**
		OR	
Q.3	**(a)**	Define caving method.	**03**
	(b)	Write short note on: i. Ore pass ii. Shaft	**04**
	(c)	Explain rill stoping method.	**07**
Q.4	**(a)**	Define mine closure.	**03**
	(b)	List the merits and demerits of the caving method.	**04**
	(c)	Explain the phases and planning guidelines for mine closure.	**07**
		OR	
Q.4	**(a)**	Differentiate between raise and winze.	**03**
	(b)	Explain sublevel stoping with a suitable diagram.	**04**
	(c)	Explain the block caving method with a suitable diagram.	**07**
Q.5	**(a)**	Define i. Ore ii. Mineral iii. Gangue	**03**
	(b)	Explain the square-set stopping method.	**04**
	(c)	Explain the sub-level caving method with a suitable diagram.	**07**
		OR	
Q.5	**(a)**	Define i. Grade ii. Cut-off grade iii. Breakeven cut-off grade.	**03**
	(b)	What is present status of the Indian metal mining industry	**04**
	(c)	Explain raising techniques in detail.	**07**

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