Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2023

Subject Code:3162202 Date:04-07-2023

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 the term: Ore Pillar, Shaft Pillar and Crown Pillar.	**03**
	(b)	Give the detail classification of stopping methods.	**04**
	(c)	Explain the desirable features of selecting a stoping method.	**07**
Q.2	**(a)**	Discuss the present status of Indian metal mining industry.	**03**
	(b)	Discuss the various factors affecting for selection of stopping methods.	**04**
	(c)	Explain room and pillar method with neat sketch.	**07**
		OR	
	(c)	Explain sub-level caving method with neat sketch.	**07**
Q.3	**(a)**	Discuss the advantages of square set stopping methods.	**03**
	(b)	Define the term: Cross cut, Level, Main Level and Sub Level.	**04**
	(c)	Explain square set stopping method and its applicability.	**07**
		OR	
Q.3	**(a)**	Discuss the caving method.	**03**
	(b)	Define the term: Panel, Splitting, Stook, Depillaring.	**04**
	(c)	Explain shrinkage stopping method and its applicability with neat sketch.	**07**
Q.4	**(a)**	Discuss the mine closure.	**03**
	(b)	Describe the applicability condition for the room and pillar mining method.	**04**
	(c)	Explain the phases and planning guidelines for mine closure.	**07**
		OR	
Q.4	**(a)**	Discuss the shape, size and thickness of deposit.	**03**
	(b)	Explain applicability and stope preparation of block caving method.	**04**
	(c)	Explain sublevel stoping method and its applicability with neat sketch.	**07**
Q.5	**(a)**	Describe the limitations and transportation of supported stopping methods.	**03**
	(b)	List the merits and demerits of the sublevel stoping method.	**04**
	(c)	Explain cut and fill stoping method with neat sketch.	**07**
		OR	
Q.5	**(a)**	Discuss the mine horizontal and vertical development.	**03**
	(b)	List the merits and demerits of the block caving method.	**04**
	(c)	Explain the physical and mechanical characteristics of the ore and the enclosing rocks.	**07**

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