

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI EXAMINATION – SUMMER 2025

Subject Code: 3162202

Date: 20-05-2025

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 following terms: (1) Stope (2) Raise (3) Winze	03
	(b) Explain the present status of Indian metal mining industry.	04
	(c) Discuss shrinkage stoping method with neat sketch.	07
Q.2	(a) Name the factors affecting the selection of stopping methods.	03
	(b) Explain the terms Crown pillar and Sill pillar with a neat sketch.	04
	(c) Differentiate between overhand and underhand stopping method with neat sketch.	07
	OR	
	(c) Write a brief note on top slicing method.	07
Q.3	(a) Define the following terms: (1) Cross – Cut (2) Lateral (3) Sub-level	03
	(b) Name the drilling patterns used in Underground Metal Mining. Explain any one.	04
	(c) Discuss room and pillar stopping method with neat sketch.	07
	OR	
Q.3	(a) Explain sand gathering plant.	03
	(b) Write a note on Ore grade and its distribution.	04
	(c) Discuss Alimak raise climber method with neat sketch.	07
Q.4	(a) Write the applicability condition of sub-level caving method.	03
	(b) Discuss the advantage and disadvantage of square set stopping method.	04
	(c) Write a brief note on sub level stoping method.	07
	OR	
Q.4	(a) Draw a layout of square set stopping method.	03
	(b) Write a short note on block caving method.	04
	(c) Describe the Drop raising method with neat sketch	07
Q.5	(a) Explain: Raise borers.	03
	(b) Discuss the design and construction of draw points.	04
	(c) Explain in detail cut and fill stoping method.	07
	OR	
Q.5	(a) Write a short note on raising by long hole drilling.	03
	(b) Explain ore and waste bin with neat sketch	04
	(c) Write a brief note on mine closure.	07
