

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2023****Subject Code:3162202****Date:02-12-2023****Subject Name:Underground Metalliferous Mining****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) List out various factors affecting for selection of stopping methods. | 03 |
| | (b) List out various drilling pattern used in Underground Metal Mining. Explain any | 04 |
| | (c) Explain the sub level stoping method with neat sketch. | 07 |
| Q.2 | (a) Define the following: (1) Stope (2) Winze (3) Raise. | 03 |
| | (b) Explain ore and waste bin with neat sketch. | 04 |
| | (c) Explain over hand stoping method with neat sketch. | 07 |
| | OR | |
| | (c) Explain under hand stoping method with neat sketch. | 07 |
| Q.3 | (a) Define the following : (1) Cross – Cut (2) Lateral (3) Ore Drive | 03 |
| | (b) Explain the present status of Indian metal mining industry | 04 |
| | (c) Write a brief note on sub level caving method. | 07 |
| | OR | |
| Q.3 | (a) Draw a layout of square set stoping method. | 03 |
| | (b) Explain recovery and dilution. | 04 |
| | (c) Describe the Drop raising method with neat sketch. | 07 |
| Q.4 | (a) Describe skip-pockets in details. | 03 |
| | (b) Define the following term: Ore passes, Chutes, Garages and Grizzlies. | 04 |
| | (c) Explain room and pillar method with neat sketch. | 07 |
| | OR | |
| Q.4 | (a) Write the applicability condition of top slicing. | 03 |
| | (b) Describe design and construction of draw points. | 04 |
| | (c) Explain in detail the Alimak raise climber method. | 07 |
| Q.5 | (a) How working is carried out in metal mine when ore body is wide? | 03 |
| | (b) Write a short note on pneumatic back filling. | 04 |
| | (c) Explain in detail cut and fill stoping method. | 07 |
| | OR | |
| Q.5 | (a) Explain sand gathering plant. | 03 |
| | (b) Describe advantage and disadvantage of square set stoping method. | 04 |
| | (c) Write a brief note on mechanical back filling. | 07 |
