

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2022****Subject Code:3172208****Date:03-01-2023****Subject Name:Mine Planning****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

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| Q.1 | (a) Define the term mine planning. Discuss the role of mine planning in mining. | 03 |
| | (b) Describe the different types of stripping ratios and their significance. | 04 |
| | (c) Define the term cut-off grade. Explain how it is determined. | 07 |
| Q.2 | (a) Describe parameter affecting design of haul road. | 03 |
| | (b) Explain the determination of mine size and Taylors mine life rule. | 04 |
| | (c) Narrate the preparation and economic evaluation of detailed project report for underground coal mine planning. | 07 |
| OR | | |
| | (c) Explain the preparation of feasibility study report. | 07 |
| Q.3 | (a) Discuss the factors affecting on choice of mining equipment. | 03 |
| | (b) Describe factors affecting to planning and designing of a surface mine. | 04 |
| | (c) Explain the different phases of planning process. | 07 |
| OR | | |
| Q.3 | (a) Define the term life of mine. Submit three common mathematical expressions to calculate the same. | 03 |
| | (b) Define the term Reserve. Explain various types of reserve. | 04 |
| | (c) Define the term mine planning and design. Explain the components of mine planning. | 07 |
| Q.4 | (a) Discuss the technical and economic information required for planning. | 03 |
| | (b) Describe the stability analysis and design methodology for waste dumps. | 04 |
| | (c) Explain the ultimate pit configuration and its determination. | 07 |
| OR | | |
| Q.4 | (a) Discuss the advantages and amendments in mine closure planning. | 03 |
| | (b) Explain the mining revenues and costs, and their estimation. | 04 |
| | (c) Explain the role of bench geometry and mine layouts in surface mines. | 07 |
| Q.5 | (a) Discuss the parameters are consider for selection of suitable stopping methods. | 03 |
| | (b) Describe the mine system and sub-system of underground coal mining. | 04 |
| | (c) Explain the role of planning and scheduling of production in underground mines. | 07 |
| OR | | |
| Q.5 | (a) Discuss the various economic considerations for optimization of mine design. | 03 |
| | (b) Describe the role of geometrical size of a mine in underground mining. | 04 |
| | (c) Explain the various legal aspects of mine closure planning. | 07 |
