

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2023****Subject Code:3172208****Date:12-12-2023****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) Discuss about mine planning and its importance. | 03 |
| | (b) Explain stripping ratio & its type. | 04 |
| | (c) Explain any two method of ore reserve estimation with sketch. | 07 |
| Q.2 | | |
| | (a) Write the components of mine planning. | 03 |
| | (b) Explain cut-off grade with one example. | 04 |
| | (c) Write a brief note on stage/phases of mine life. | 07 |
| OR | | |
| | (c) Explain in detail: Ultimate pit configuration and its determination. | 07 |
| Q.3 | | |
| | (a) What do you mean by Probable Ore Reserve & Proved Ore Reserve? | 03 |
| | (b) Draw a neat sketch of bench geometry and explain it. | 04 |
| | (c) Discuss the contents and preparation of feasibility report of surface mine. | 07 |
| OR | | |
| Q.3 | (a) Which factors are affects to planning and designing of surface mines? | 03 |
| | (b) Explain the Taylor's mine life rule in details. | 04 |
| | (c) Narrate the preparation and economic evaluation for underground coal mine planning. | 07 |
| Q.4 | | |
| | (a) Define revenue and cost. | 03 |
| | (b) What is haul road? Discuss its importance in opencast mines. | 04 |
| | (c) Give a brief note on production planning for underground metal mining. | 07 |
| OR | | |
| Q.4 | (a) What do you understand by mine closure? | 03 |
| | (b) Discuss the influence of pit slope on mine economics. | 04 |
| | (c) Why don't we use a couple of huge pieces of equipment to extract all of the ore during the first year, instead of spending say 15-20 years in one operation? Explain in detail. | 07 |
| Q.5 | | |
| | (a) Which parameters are considered for selection of suitable stoping methods? | 03 |
| | (b) Discuss the mine system and sub-system of underground coal mining with necessary sketch. | 04 |
| | (c) Write a note on legal aspects and technical parameters are considered for mine closure. | 07 |
| OR | | |
| Q.5 | (a) How do we maximize income in mining? Also write some of the ways to minimize the cost. | 03 |
| | (b) Write the advantages and disadvantages of mine closure planning. | 04 |
| | (c) Discuss the Stability analysis and design methodology for waste dumps. | 07 |
