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10MN751

Seventh Semester B.E. Degree Examination, Aug./Sept. 2020

Advanced Surface Mining

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. Write a detailed note on land acquisition. (10 Marks)
b. Write a detailed note on conservation of minerals. (10 Marks)
- 2 a. With sketch, explain the method of opening box cut. (10 Marks)
b. Explain the factors to be considered for height and width of benches. (10 Marks)
- 3 With neat layout sketch, explain the working of overcasting in steep deposits. (20 Marks)
- 4 a. Explain the factors affecting the stability of a slope. (10 Marks)
b. Explain the different types of bench slope failures. (10 Marks)

PART – B

- 5 a. Explain the factor of safety for calculation of failure by plane failure and wedge failures. (10 Marks)
b. Explain the analysis of circular failure using circular failure charts. (10 Marks)
- 6 a. Explain the selection of continuous and discontinuous open cast mining machineries. (10 Marks)
b. Explain the continuous miner with their application. Limitation and working principles. (10 Marks)
- 7 a. How do you ensure safety in opencast mine while designing the bench? Explain in detail. (12 Marks)
b. Explain the procedure/steps to control the blast induced ground vibration using predictor equation. (08 Marks)
- 8 a. Describe the following related to haul road in opencast mine. (10 Marks)
i) Escape Lane ii) Safety beam iii) Cross slope and iv) Super elevation.
b. Explain various design aspect of spoil dumps and their stability. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.