

PRACTICE TEST
End Semester Examination, December, 2025

Program: BTECH
Semester: III
Subject: ELEMENTS OF MINING TECHNOLOGY
Subject Code: 8PCCMiE201

Course Outcome:

On the completion of the Course, the students will be able to:

Course Outcomes	Description
CO1	Understand the history & significance of mining and mineral resources of India.
CO2	Gain the basic concept of mining, its terminology and classification.
CO3	Explain the technical knowledge of mode of access to deposit, type of mining & advantages & disadvantages.
CO4	Understand the different mining methods, its applicability & limitation.
CO 5	Shaft related terminology & sinking operations.

UNIT I

SECTION A (5 marks)

1. Define the following terms:
 - A. Mine
 - B. Mineral
 - C. Mining
 - D. Rock CO 1(Remember)
2. Write down the location of distribution of Zinc and lead in India. CO 1(Understand)
3. Summarize the function of Indian Bureau of Mines (IBM). CO 1 (understand)
4. Enumerate the uses of Uranium, Gold and Graphite CO 1(Remember)

SECTION B (10 marks)

5. State the uses of following minerals-
 - a) Coal
 - b) Lignite

- c) Iron
- d) Copper

e) Aluminum CO 1 (Remember)

- 6. Describe in brief the about Ministry of Coal and GSI. CO 1 (Understand)
- 7. Describe in brief the distribution of energy resources likes Coal, petroleum & Uranium in India. CO1 (Understand)
- 8. Give brief distribution of Bauxite, copper and Iron ore in India. CO 1 (Understand)

SECTION C (20 marks)

- 9. Being a mining engineer the role of statutory bodies of mining are very important. Describe the role and functions of important organizations like CIL, CIMFR, MECL, IBM etc. CO 1 (Apply)
- 10. DGMS is the governing body of safety of mines. Elaborate about DGMS. Suppose you are Director of DGMS, Enlist the role and function of DGMS. CO 1(Apply)

UNIT II

Section A (5 marks)

- 11. Define stripping ratio. Explain break even stripping ratio with formula. CO2 (Remember)
- 12. Define Mining. Discuss the two types of mining method. CO 2 (Understand)
- 13. Contrast stripping ratio & break even stripping ratio. A coal mines produces 16000 tonnes of coal per month by removing 80000 metric cube of overburden or waste. Evaluate the stripping ratio for this mine. CO2 (Evaluate)
- 14. Enlist the factors affecting selection of site of box cut. CO 2 (Understand)
- 15. Define the followings-
 - (a) Bench
 - (b) Bench crest
 - (c) High wall
 - (d) Slope angle of bench
 - (e) Berm CO1(Remember)

SECTION B (10 marks)

- 16. Discuss the production process in surface mining. Illustrate the five processes in detail with equipment's required in that production process. CO2 (Apply)
- 17. Enumerate the factors affecting selection of opencast mining method. (Understand)
- 18. Elaborate the engineering parameters of opencast mining methods. CO2 (Understand)
- 19. Define box cut with diagrams. What are the types of box cut? Draw neat sketch. CO2 (Understand)

SECTION C (20 marks)

- 20. If we are planning for opening of an opencast mine then on which factors affecting selection of opencast mining method. What are the advantages and disadvantages of opencast mining? CO 2 (Apply)
- 21. If you have planned to start opencast mines, discuss the production process required in surface mining. Illustrate the five processes in detail with equipment required in that production process. CO 2 (Analyze)

UNIT III

Section A (5 marks)

- 22. Define Adit. Draw a neat sketch. (CO3) (Understand)

23. State disadvantages of surface mining. (CO3) (Remember)
24. Name the 3 modes of access to deposit with suitable diagram. (CO 3) (understand)
25. Differentiate between in-seam mining & horizon mining. (CO 3) (understand)

Section B (10 marks)

26. Write notes on followings with diagram: (CO 3)(Understand)
 - a. Drift
 - b. Staple pit
27. Describe the factor affecting the selection of site of shaft. (CO3) (Understand)
28. What is incline? Explain about incline made in mines with suitable sketch. (CO3) (Understand)

Section C (20 marks)

29. Evaluate the Breakeven stripping ratio for the following (CO3) (Evaluate)

Recoverable value per tonne of ore – Rs 900

Production cost per tonne of ore - 550

Stripping cost per tonne – 45

30. If the deposit is lying below & above the earth seam. Can you suggest the various methods to access the deposit. Discuss all methods with diagram. CO3 (Apply)

UNIT IV

SECTION A (5 marks)

31. Define the terms:
 - A. Main gate
 - B. Tail gate
 - C. AFC
 - D. Goaf
 - E. Shearer CO 4 (Remember)
32. Write down the conditions favoring the adoption of open cast mining. (Understand)

SECTION B (10 marks)

33. Mention the basic methods of coal mining. State in brief the Bord and Pillar as well as Longwall methods of underground coal mining. (CO 4) (Understand)
34. Discuss the Longwall Advancing methods of underground coal mining. CO4 (Understand)
35. State the advantages and disadvantages of Bord and Pillar System of coal mining. CO 4 (Understand)
36. Elaborate the three development methods of Bord & pillar method with a neat sketch. CO 4 (Understand)
37. Design an underground longwall mining layout with all the terminology & both method of extraction techniques with sketch. CO 4 (Apply)

UNIT V

Section I (5 marks)

38. Describe the shape and size of a shaft. CO 5 (Understand)
39. Enumerate the equipment's required for sinking of shaft. CO 5 (Understand)
40. Explain the shaft centering arrangement with diagram. CO 5 (Understand)

41. Discuss the terms walling scaffold & rider. CO 5 (Understand)
 42. Write short notes on-(a) Cementation
 (b) Freezing CO 5 (Remember)

Section II (10 marks)

43. Discuss the drilling and blasting process in a sinking shaft. CO 5 (Understand)
 44. What is permanent lining in shaft sinking process? CO 5 (Understand)
 45. Discuss the factors which are to be considered for location of shaft. CO 5 (Apply)

Summary Sheet

CO Wise

CO	Q. No	Marks
CO1	1,2,3,4,5,6,7,8,9,10	140
CO2	11,12,13,14,15,16,17,18,19,20,21,22	95
CO3	23,24,25,26,27,28,29,30,32	80
CO4	33, 34,35,36,37,38,39,40,41	80
Total		395

Unit Wise

Unit	Q. No	Marks
Unit 1	1,2,3,4,5,6,7,8,9,10	140
Unit 2	11,12,13,14,15,16,17,18,19,20,21,22	95
Unit 3	23,24,25,26,27,28,29,30,32	80
Unit 4	33, 34,35,36,37,38,39,40,41	80
Total		395

BLOOMS TAXONOMY LEVEL (BTL) WISE

BTL	Q. No	Marks
LOT	1,2,3,4,5,6,7,8,11,12 ,14,15, 17,18,19,20,23,24,25, 26,27,28,29,30,31,34,35,36,37,38,39	225
HOT	9,10,13,16,21,22,31,32,40,41	170
Total		395

Prepared By: Sumeet Kishore

Disclaimer: - This is a Practice set. The Question in End term examination will differ from the Practice set. This Practice set is meant for practice only.