



# CBCS SCHEME

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18MN32

## Third Semester B.E. Degree Examination, Jan./Feb. 2021 Elements of Mining Engineering

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. Write the significance of mining industry in national economy. (10 Marks)  
b. Explain basic mining terminologies. (10 Marks)

OR

- 2 a. Describe shape and size of the drive and also explain the factors influencing shape and size of the drive. (10 Marks)  
b. Explain different surface arrangement of shaft sinking. (10 Marks)

### Module-2

- 3 a. Write down the geotechnical investigations for shaft sinking operation. (10 Marks)  
b. Explain the method of sinking shaft in pressurized, loose and running soil area. (10 Marks)

OR

- 4 a. Explain the need and necessary for deepening of the operating shaft. (10 Marks)  
b. Explain the freezing method of shaft sinking. (10 Marks)

### Module-3

- 5 a. Write note on Mirage of cross cuts from shaft to reach ore body by conventional methods. (10 Marks)  
b. Explain the ventilation system in drive. (10 Marks)

OR

- 6 a. With a neat sketch explain the Alimark raise climber. (10 Marks)  
b. Describe the drilling pattern for underground hard rock. (10 Marks)

### Module-4

- 7 a. Explain different types of support system in underground mines. (10 Marks)  
b. With a neat sketch, explain the cog support system. (10 Marks)

OR

- 8 a. Explain the roof bolting system with a neat sketch. (10 Marks)  
b. Write note on hydraulic support in long derives. (10 Marks)

### Module-5

- 9 a. Describe conventional method of drilling in underground hard rock mines. (10 Marks)  
b. Describe contribution and working principle of tunnel boring machine. (10 Marks)

OR

- 10 a. Write down different types of transportation of muck in underground by conventional method. (10 Marks)  
b. Describe shield tunneling method. (10 Marks)

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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.