



# CBGS SCHEME

17MN54

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## Fifth Semester B.E. Degree Examination, Jan./Feb. 2021 Underground Coal Mining

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Explain the growth of coal mining industry in India. (10 Marks)  
b. Discuss the different analysis of coal. (10 Marks)

OR

- 2 a. Explain the basic coal mining methods. (10 Marks)  
b. List out the factors influencing the choice of mining methods. (10 Marks)

### Module-2

- 3 a. With a neat sketch, explain the different lines of extraction. (10 Marks)  
b. With the given data, calculate : i) the strength of pillar ii) Load on pillars  
Depth of working = 200m, Width of galleries = 3m, Height of galleries = 3m, Width of square pillars between centers of bords = 22.5m. (10 Marks)

OR

- 4 a. Discuss the different methods of development in Bord and Pillar mining and explain Blasting off the solid. (10 Marks)  
b. Explain the variants of room and pillar mining method (10 Marks)

### Module-3

- 5 a. Explain the characteristic of immediate roof during long wall panel extraction. (10 Marks)  
b. Explain the factors which influence the layout of longwall faces. (10 Marks)

OR

- 6 a. Explain the classification of modern longwall faces. (10 Marks)  
b. Select a suitable method to work a coal deposit at a depth of 600m, gradient 1 in 4 and thickness 3.6m. Explain the mining method with a layout. (10 Marks)

### Module-4

- 7 a. With a neat sketch, explain Inclined Slicing. (10 Marks)  
b. Explain the problems of mining thick coal seams. (10 Marks)

OR

- 8 a. Explain the process involved in sub level caving. (10 Marks)  
b. Briefly explain Descending shield method of coal mining. (10 Marks)

### Module-5

- 9 a. Mention the various goaf control methods practiced in underground coal mines. Discuss any one method in detail. (10 Marks)  
b. With a neat sketch, explain Blasting Gallery method of mining coal. (10 Marks)

OR

- 10 a. Explain the applicability and limitation of hydraulic mining. (10 Marks)  
b. Explain in detail, the basic principle of coal Bed Methane extraction. (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.