

# CBCS SCHEME

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15MN54

## Fifth Semester B.E. Degree Examination, June/July 2018 Underground Coal Mining

Time: 3 hrs.

Max. Marks: 80

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

### Module-1

- 1 What are the various modes of access for opening up of coal seams for underground mining? Explain each with suitable diagrams, giving their applicability, advantages and disadvantages. (16 Marks)

OR

- 2 What are the various factors influencing the choice of mining methods for underground mining for coal seam? Explain each in detail. (16 Marks)

### Module-2

- 3 A coal seam 4.0m thick, dipping at 1 in 8, is lying at a depth of 240m from surface. It is planned to develop the coal seam by B and P method by panel system using L.H.D. It is planned to produce 100t/shift from one panel. Explain the method of development, with a neat and suitable layout, giving following: i) Drilling and blasting ii) Supports iii) Loading and transportation iv) Ventilation v) Man power required and OMS expected. Assume relevant data, wherever necessary. (16 Marks)

OR

- 4 a. Discuss on preparatory arrangement to be made before starting depillaring operations in B and P Panel. (10 Marks)  
b. Explain the principles of depillaring operations in B & P panel. (06 Marks)

### Module-3

- 5 A coal seam of 3m thick, dipping at 1 in 10, is lying at depth of 300m from surface. It is planned to extract the coal seam by fully mechanized Long wall retreating method. Using DERD shearer, AFC and powered supports, explain the method in detail, with suitable and neat layout. Assume relevant data, wherever necessary. Give specifications of each machinery used in L/W panel. (16 Marks)

OR

- 6 a. What are the factors to be considered before introducing fully mechanized Long wall mining? Explain each in detail. (10 Marks)  
b. Distinguish between Long wall advancing and Long wall retreating. (06 Marks)

### Module-4

- 7 a. Discuss on the problems of extraction of their seam by Long wall mining. (06 Marks)  
b. Give a classification of thick seam mining methods for coal. (05 Marks)  
c. Explain the problems of thick seam mining of coal. (05 Marks)

OR

- 8 A coal seam of 12m thick is lying at a depth of 250m from surface and dipping at 1 in 9. It is planned to extract the coal seam by slice mining in descending order by caving method. Using wire netting and fully mechanized Long wall retreating method. With DERD shearer, AFC and Powered supports. Explain the method in detail with suitable and neat diagrams. Assume relevant data wherever necessary. (16 Marks)

**Module-5**

- 9 What is Horizon Mining? Explain the method in detail, with suitable diagrams (Plan and front elevation) assuming one coal seam is existing. Assume other relevant data, wherever necessary. (16 Marks)

**OR**

- 10 Discuss on
- a. Pipe line transportation of coal in hydraulic mining. (08 Marks)
  - b. Drilling and blasting in Blasting gallery method. (08 Marks)

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