

B. E. (7th Semester, Mining) Supplementary Examination, 2012
Special Underground Methods (MN-706)

Full Marks:70

Time: 3hours

Answer six questions taking three from each half.
Question No.1 and 6 are compulsory
Figures on the right-hand side margin indicate full marks

Ist Half

1. a) What do you understand by draw control in caving method of stoping?
b) Give a list of equipment used in the mechanization of a stoping operation in a metal mine specifying the purpose of application.
c) Discuss the factors to be considered before deciding a caving method of stoping.
d) Give three differences between sublevel caving and block caving?

(4+4+4+3)

2. a) Describe with sketches the development operations in block caving
b) What are the differences between block, panel and mass caving?

(7+3)

3. An orebody of 30-32mts in thickness has to be worked by sublevel caving method of stoping. Describe the development operation and stoping methodology.

(10)

4. a) Elaborately describe the planning process of a metal mines.
b) What do you understand by LTS, MTS and STS?

(7+3)

5. Write short notes on:

1. Compressor
2. Roof bolter
3. Relation between LTS, MTS and STS.

(3+3+4)

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SECOND HALF

6. a) What are the necessary conditions to adopt Blasting Gallery (BG) method in extraction of thick coal seam?
b) Describe the process of development in Bhaska Method of Mining.
c) Write a short-note on flexible roofing method of extraction.

(5+4+4)

7. a) Describe Horizontal Slicing technique with a suitable example in Indian Coal Mining Industry.
b) Write short note on Sublevel Caving.

(8+3)

8. a) Explain with illustration the induced blasting practice in Blasting Gallery technique.
b) Describe Tipong method of extraction with necessary diagram.

(5+6)

9. Describe a proper method for extraction of a thick coal seam. The seam characteristics are stated below:-

- Depth of seam: 200-300m from surface
- Thickness of the seam: 21.7m
- Gradient of the seam: 26° to 34°
- Degree of gassiness: Degree-III
- Nature of immediate roof: 6.5m sandy shale, inter-bedded with sandstone and with massive sandstone above.
- Nature of floor: 1.6m of burnt coal (Jhama) with sandy shale inter-bedded with sandstone below.

(11)

10. a) Describe with simple layout of a district which is to be worked by Hydraulic Mining.
b) Explain the working procedure of Simultaneous Extraction in Descending Order with Caving.

(5+6)