

Bengal Engineering and Science University, Shibpur
B.E in Mining Engineering 7th Semester Examination, 2013
Special Underground Methods (MN705)

Question No.1 and 6 is compulsory. Answer any four from the rest of the questions taking two from each half

Figures on the right-hand side margin indicate full marks

Full marks : 70

Time : 3 Hours

Ist Half

1. a. Give three differences between sublevel caving and block caving.
b. Define: Project phases, Deliverables, Work packages and levels.
c. Describe the method of draw control in block caving method of stoping.
d. Describe the development operation of sublevel caving.
e. What do you understand by top-down and bottom-up scheduling?
(2+2+4+5+2)

2. Describe the planning methodology of an underground metal mines.
(10)

3. Describe the development operations of block caving method of stoping.
Give two differences between block, mass and panel caving.
(8+2)

4. Define LTS, MTS and STS.
Discuss the relationship between LTS, MTS and STS.
With an example of a mining project show a phase, function and level matrix diagram.
(2+3+5)

5. Write short notes on:
 1. L.H.D
 2. Compressors
 3. Drills(3+3+4)

Special Underground Methods (MN-705)
SECOND HALF

6. a) Give a concise description on systematic support system of a panel working with blasting gallery technique. Explain the induced blasting practice in the same system of extraction.
- b) Explain the working procedure of Non-Simultaneous Extraction in Descending Order with Caving

(6+4+3)

7. a) Describe with necessary diagrams the different stages involved in Tipong method of extraction.
- b) Write a short-note on flexible roofing method of extraction.

(8+3)

8. a) A coal seam 20 m thick, gradient around 30° situated at a depth around 300 m is to be worked by Horizontal Slicing technique. Describe its process of extraction with proper diagram.
- b). Describe the control measures for fire due to spontaneous heating in blasting gallery technique.

(8+3)

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

- Depth of seam: 300m from surface
- Thickness of the seam: 4.2 to 5.1m
- Gradient of the seam: 5° to 7°
- Degree of gassiness: Degree-I

Immediate roof above coal seam: carbonaceous shale and shale, easily cavable.

(11)

10. a) Compare between integral caving systems with sub-level caving system of extraction.
- b) How supporting is done at face operating by Jankowice system?

(6+5)