

Sixth Semester Mining Engineering Examination 2012
Underground Metal Mining (MN604)

Full marks 70

Time : 3 hours

All questions are compulsory

First half

1. a. Give three differences between sublevel stoping and V.C.R method
- b. Describe the principal of overhand method of stoping.
- c. Give three differences between raising and winzing.
- d. Describe Kimberley chute and also state its advantages.

(3+4+3+5)

2. A haulage drive of 4.2 X 3mts dimension and 280mts in length has to be driven in hard rock conditions. The work has to be completed in 90 days. Describe the cycle of operation, manpower and time cycle for completing the haulage drive.

(10)

Or

- a. Describe the cycle of operation of a conventional method of raising.
- b. Name the parts of an Alimak raise climber
- c. Discuss the principle of long hole raising.

(4+3+3)

3. a. Describe the Brest stoping method.
- b. Write short notes on ore bin and brow bin

(4+6)

Or

An orebody of 35-38mts. in thickness, dipping at 62°-68°, having strong hangwall and footwall, has to be worked by sublevel method of stoping to produce 900 tons per day. Describe with neat sketches the development and stoping operation.

(10)

Second Half

4. a. What are the parameters considered for selecting a stoping method?
b. With a layout describe the hydraulic filling system in cut and fill stoping.
c. Write the differences of the followings:
i) Placer mining and Solution mining
ii) Hydrauliclicking and Leaching

(3+5+3+4)

5. a. With neat sketches describe the development operations of an overhand cut and fill stoping method.
b. Give two differences between underhand cut and fill and post and pillar method of stoping

(8+2)

Or

- a. With neat sketches describe square set method of stoping.
b. Write short note on stope and pillar method of stoping

(3+7)

6. Describe mining by 'borehole extraction', highlighting its conditions of applicability, sequence of development (with neat sketches), advantages and disadvantages. Name some leachable minerals with relevant solvents.

(8+2)

or

What do you mean by placer deposit? Describe different methods of formation of Placer Deposit. Enumerate Dredging with a neat sketch.

(2+3+5)