

Roll No

MI - 501**B.E. V Semester**

Examination, June 2015

Surface Mining**Time : Three Hours "****Maximum Marks : 70****Note:** i) All question are to be attempted at one place.

ii) In all questions Part A and B are compulsory from C and D attempt any one.

iii) Part (a) Carry 2 Marks.

iv) Part (b) Carry 5 Marks.

v) Part (c) and Part (d) Carry 7 Marks.

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1. a) What is the difference between surface and underground mine?
- b) Explain the various types of surface mining methods with example of minerals to be excavated?
- c) What are the various parameters to be taken for designing the bench and haul road of an open cast coal mine and also explain the factors that affecting these parameters?
- d) What is stripping ratio and solve the problem. In an open pit mine an ore body is of 20 m width and 65° incline. The density of ore and surrounding rock is 2500 and 1500 kg per m³ respectively. The bench height and width is 7 m and 10 m respectively. The bench sidewall slope is 35° and depth of mine is 300 m. Determine the overall pit slope, stripping ratio for the mine in which ore body is in 30 m depth from the surface.

2. a) What is overall pit limit and ultimate pit limit of an open pit mine?
- b) What is breakeven stripping ratio and explain its significance. And also explain the various types of Layout Opencast mine Waste dumps?
- c) What is Box cut? How benches are formed? Explain the various methods of drivage of box cut?
- d) Draw and explain the layout of internal and External Box cut of an open Pit mine?
3. a) What is Drill - ability of Rock?
- b) Explain the Various factors affecting the selection of drilling machine?
- c) Explain the Various components and their purpose of Rotary Blast Hole drill machine?
- d) What is incline drilling? Explain any one type of incline drilling machine and their advantages and disadvantages?
4. a) What do you understand by Pit Preparation?
- b) Explain the advantages, applicability and disadvantages of Bucket wheel Excavator?
- c) Explain the constructional and working difference between Hydraulic Excavator and Dragline?
- d) Draw and explain the constructional feature of Dozer and also explain their types?
5. a) Explain various components of Belt conveyor system?
- b) Explain the applicability, advantage and disadvantages of Rail Transport system?
- c) Explain the Applicability, advantage and disadvantages of Belt Conveyor system?
- d) Draw and explain the types of Automobile System in Opencast coal mines?

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