

Total No. of Questions : 8]

[Total No. of Printed Pages : 2

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## **MI-5001-CBGS**

### **B.E. V Semester**

Examination, December 2020

## **Choice Based Grading System (CBGS)**

### **Surface Mining**

*Time : Three Hours*

*Maximum Marks : 70*

**Note :** i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Give classification of Surface mining method in relation to equipments used.  
b) Briefly describe various operations involved in Surface Mining.
2. a) Describe various factors which govern Bench Parameters of an opencast mine?  
b) i) Natural stripping ratio  
ii) Average Stripping ratio  
iii) Peak stripping ratio
3. a) Explain the working of down the Hole Drilling machines and its advantage.  
b) An opencast mine is having soft to medium hard rock formation with bench height of 12m. Blasting with large diameter drill hole is desired to meet out high production demand. Explain the type of drilling rig which will you prefer under above conditions with suitable diagram.

MI-5001-CBGS

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[2]

4. a) Discuss the various factors for selection of a exploratory drilling machine. Describe the construction of a double tube core barrel with suitable sketch.  
b) What are the various parameters required to be considered for determining the optimum height, width and slope of a bench in an open pit mine.
5. a) Discuss the various activities of open pit mine development in brief and the various site preparation activities required.  
b) Discuss the various types of Scrapers. Explain machine operation in brief.
6. a) You are a manager of an open cast coal mine. You are required to procure a suitable machine to be used in coal stockyard for loading railway wagons. Give the name of the loading machine and prepare technical specifications for procurement.  
b) Describe the main constructional features of Electric rope shovel with neat sketch ( mainly the crowd mechanism).
7. a) Calculate the productivity of a 10 m<sup>3</sup> shovel with 85 tonne dumper? Assume all suitable conditions and data required for calculation.  
b) Describe the front end (bucket) attachment of an electric rope shovel with a neat sketch showing its various parts.
8. a) Write down the applicability and limitations of dumpers in open pit mines and discuss rear discharge dumper in brief.  
b) Write down the applicable conditions of conveyor transport system in mines and discuss pipe conveyor system in brief.

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