

Roll No.:

## MI-5001 (CBGS)

B.E. V Semester

Examination, December 2017

### Choice Based Grading System (CBGS)

#### Surface Mining

Time : Three Hours

Maximum Marks : 70

- Note:** i) Attempt any five questions. All parts of each question are to be attempted at one place.  
ii) All questions carry equal marks.

1. a) Define stripping ratio.  
b) Write a note on classification of surface mining methods.  
c) Discuss the various activities of open pit mine development in brief.
2. a) Define ultimate pit and its significance.  
b) What type of mineral deposits are amenable to surface mining? Discuss with suitable examples.  
c) Explain Box Cut and also discuss how benches are formed with a neat sketch?
3. a) Write down the advantages of inclined drilling.  
b) Explain mechanism of percussive drilling. Write down the advantages of using Down the Hole Drilling machines.  
c) 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.

4. a) Explain ripping.  
b) What are the various types of blades used in Dozers?  
c) Describe the constructional features of scrapers and machine operation.
5. a) Write down the formula for calculating the productivity of excavators.  
b) Describe the front end (bucket) attachment of an Electric rope Shovel with a neat sketch showing its various parts with a neat sketch.  
c) Describe the main constructional features of a Dragline with neat sketch.
6. a) Draw a neat diagram of bucket wheel of BWE and its productivity calculation.  
b) Write down the applicable conditions of Conveyor Transport System in Mines.
7. a) What is meant by synchronization of shovel dumper combination? Why it is necessary? What is match factor? Write down the applicability and limitations of Dumpers in open pit mines.  
b) Compare electric rope shovel with hydraulic excavators.
8. a) Explain walking mechanism of Dragline.  
b) Calculate the productivity of a  $4.6\text{m}^3$  shovel with 35 tonne dumper? Assume all suitable conditions and data required for calculation.