

Roll No .....

**MI - 602****B.E. VI Semester**

Examination, June 2015

**Mining Machinery - II****Time : Three Hours****Maximum Marks : 70**

- Note:** i) Section A is compulsory for all question.  
 ii) In Question 1 and 2 solve any two from remaining.  
 iii) In Question 3, 4, 5 solve any one from remaining.

1. a) Neat sketch of the following: (any two) 6  
     i) Bucket of aerial ropeway  
     ii) Angle station  
     iii) Loading station  
 b) Describe the different methods of discharge station. 4  
 c) What is an aerial ropeway and what are the advantages and disadvantages? 4  
 d) Describe trestles. 4
2. a) A 900 mm, trunk belt is to be installed in a level roadway 1000 m. long. Calculate the power to run the loaded belt, given that the conveyor is rated to carry 300 tonnes of coal per hour at a speed of 115 m. per minute. Assume roller friction to be 0.02 and the weight of idlers and belt per meter run to be 70 kgs. 4  
 b) What are the purpose of tension and loop-take up arrangements and classify its arrangements with diagram? 5

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- c) What are the factors that must be considered before selection of conveyor belt? 5  
 d) Describe the main components of a belt conveyor with its limitations. 5
3. a) What are the advantages and disadvantages of panzer conveyor? 5  
 b) A conveyor is 600 m long and conveys a mineral of bulk density  $0.8 \text{ te/m}^3$  up to a gradient of 1 in 60 at 220 te/h. and the belt width is 800 mm. Calculate the suitable power and belt strength by assuming suitable data? 9  
 c) Describe the scraper chain conveyor with its advantages and disadvantages. 9
4. a) What is skip winding and write its benefit and disadvantages? 4  
 b) Make neat sketch of pit top and pit bottom shaft arrangement? 10  
 c) Plot the torque-time and power-time diagram for a friction winder by assuming suitable data? 10
5. a) What is the speed of HSLT and LSHT motor and describe its types? 2+6  
 b) What is a hydraulic accumulator and what are the types and benefits of the accumulator? 6  
 c) Explain the applications of different types of hydraulic motor with schematic diagram of basic hydraulic system? 6

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