

B.E. Mining Engineering Fourth Semester
MN403 - Mining Machinery-I

P. Pages : 1

Time : Three Hours



GUG/W/18/1586

Max. Marks : 80

- Notes :
1. Due credit will be given to neatness and adequate dimensions.
 2. Assume suitable data wherever necessary.
 3. Illustrate your answers wherever necessary with the help of neat sketches.
 4. Marks are indicated in the right.

1. Draw a Run-Round Arrangement at pit-top and explain its working in detail along with its advantages and limitations. **16**

OR

2. What are wire-rope lays? Classify wire – ropes on the basis of lays. and explain them in brief. Discuss in brief the factors affecting the selection of wire ropes. **16**

3. a) Explain in brief the essentials of good haulage track. **8**

- b) What is super elevation? Discuss its significance in track laying. Also high light the significance of sleeper and ballast used in track laying. **8**

OR

4. A locomotive and train have a total mass of 800 metric tonnes. The resistance opposing motion can be assumed to be constant and it amounts to 80 N/te. The locomotive can exert a pull of 150 KN. Determine how long will it take to accelerate the train from rest to 84 kmph on level track. **16**

5. What are In-line type, L Type and combination of Inline and L type AFC? Discuss significance of chain conveyors. Explain major component parts of AFC along with its specifications. **16**

OR

6. Discuss the applicability conditions, advantages and limitations of aerial rope-way systems. **16**

7. Explain Multi rope system of winding along with its advantages. Also compare types of drums used on drum winders. **16**

OR

8. Distinguish between duty cycle and winding cycle of winder. Discuss component parts of static torque and Dynamic torque used in torque time diagrams of winders. **16**

9. Draw a well labelled diagram of cage suspension gear arrangement for winders and explain its component parts. **16**

OR

10. Write short notes. **16**

- i) List of safety devices on winders. ii) Mechanical brakes on winders.
