

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)
Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

III B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, JUNE-2018Subject: Underground Coal Mining Technology

Branch: MINING

Time: 3 hours

Max. Marks: 60

PART – AAnswer **ALL** questions of the following**5x2Mark=10 Marks**

1. List various techniques available for development of a coal seam.
2. What are the different types of development methods in Bord and Pillar method?
3. What are the factors to be considered for selection of equipment while opening the coal seams by underground methods?
4. List various face support systems used in Longwall system of mining.
5. What is meant by face support system?

PART-BAnswer any **FIVE** Questions of the following**5x10 Marks= 50Marks**

1. What do you mean by division of mine area? Briefly explain the concept of uni and bi lateral panels.
2. What are different shapes of shafts, which shape is advantageous and why?
3. Briefly explain various parameters influencing the size of pillars in Bord and Pillar mining method.
4. Explain the procedure of introducing Longwall machinery into coal seam? What are its favorable conditions?
5. Describe "Shields" used in long wall method with a neat sketch
6. a) How production capacity of a mine is determined?
b) What are the advantages and disadvantages of horizon mining method?
7. a) Write a short note on Continuous Miners
b) What are S.E.R.D and D.E.R.D.'s?
8. **Write a short note on any TWO of the following**
a) In-situ theory b) Organization Chart of Coal Mine c) Mechanized Stowing

2x5 Marks= 10Marks

Code No.: 52510

MR15-2015-16 Batch

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III B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, MAY-2018

Subject: Surface Mining Technology

Branch: MINING

Time: 3 hours

Max. Marks: 60

PART – A

Answer ALL questions of the following

5x2Mark=10 Marks

1. Define Break even stripping ratio.
2. Define box cut and write the objectives.
3. Explain about continuous method of operation .
4. What is the purpose of scrapper?
5. Environmental Problems in OCM.

PART-B

Answer any FIVE Questions of the following

5x10 Marks= 50Marks

1. State the suitability and limitations of open pit mining. Explain the importance of stripping ratio in open pit mining with example.
2. A mine management has planned to produce 3 million tonnes of coal per annum. It has three seams and are at a depth of 100 m, 125 m and 140m with thickness of 4m, 10m and 6 m respectively and dipping at 1 in 8 gradients. Calculate how many drills are required to produce the stated production.
3. A bucket wheel excavator is deployed for extraction of lignite coal. Bucket capacity, number of buckets, fill factor and rpm are 700 liters, 9, 85% and 7 respectively. Determine the tonnage handled per hour .
4. Write the following i. Extraction of underground developed pillars ii. Dredging
5. List out what are the recent developments in the use of heavy earth moving machinery in opencast mines?
6. a) Briefly explain the difference between percussive drilling and rotary drilling.
b) Explain the working principle of pay loader with a neat sketch ?
7. An overburden bench of height 10 m is prepared for blasting operation to expose the coal seams. The drilling geometry is 4 m x 6m x 11m. Diameter and number of holes to be blasted are 150 mm and 100. Determine the powder factor of the blasting if the specific gravity of blasting face is 2.5.
8. Write a short note on any two of the following
a) Scrapper b) Drilling Machine c) Conveyor

Code No.: 52509

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III B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, MAY-2018

Subject: Mine Ventilation

Branch: MINING

Time: 3 hours

Max. Marks: 60

PART – A

Answer ALL questions of the following

5x2Mark=10 Marks

1. List the sources of heat in mine?
2. If the quantity of a has to be increased from $1500 \text{ m}^3/\text{min}$ to $3000 \text{ m}^3/\text{min}$, what will be the effect on H.P of the fan?
3. What is meant by characteristic curve? What it indicates?
4. What are the different types of ventilation systems?
5. What is general body of air?

PART-B

Answer any FIVE Questions of the following

5x10 Marks= 50Marks

1. What are the sources of firedamp? What are physiological effects of firedamp? Discuss different methods for methane drainage.
2. a) What are the different air flow control devices.
b) Explain the various devices used for coursing the mine air. Explain any two in detail, with suitable diagrams.
3. Derive the expressions for the size of regulator. Two splits A and B pass 40 and $50 \text{ m}^3/\text{s}$ of air respectively with the pressure of 400 Pa . The pressure drop in trunk airways being 1000 Pa . Calculate pressure and power of booster fan in split A that will cause complete stoppage of flow in split B. Main fan pressure remains constant.
4. a) What's meant by Descensional ventilation system? Write its merits and demerits?
b) Explain various inputs required in ventilation planning.
5. Write the constructional features of vane anemometer? Determine the velocity of the airway using vane anemometer?
6. a) Write short notes on Physiological effects of nitrous fumes
b) Explain briefly how quantity survey is done in underground mines.
7. a) What are the different types of mine fans? Explain
b) Briefly explain about face ventilation.
8. Answer any TWO Questions of the following
a) Write short notes on Hardy Cross method
b) What are the standards of ventilation.
c) Write a note on equivalent orifice.

2x5 Marks= 10Marks

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Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad**III B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, MAY-2018**Subject: Engineering Economics and AccountancyBranch: Common to ME & Mining

Time: 3 hours

Max. Marks: 60

PART – A

Answer ALL questions of the following

5x2Mark=10 Marks

1. State the determinates of Demand
2. What is the Least cost combination of inputs?
3. Explain Block Pricing.
4. State the purpose of Accounting Rate of Return (ARR).
5. What is Bad Debts and Provision for bad debts?

PART-B

Answer any FIVE Questions of the following

5x10 Marks= 50Marks

1. Answer the following:
 - (a) "Managerial economics is linked to the disciplines of economic theory, decision sciences and business functions" discuss the link of ME with other disciplines.
 - (b) Demand Determinants
2. a) Explain managerial significance and limitations of Break-even Analysis (BEA).
b) Explain about Controlled Experiments.
3. (a) What are the causes for the emergence of Monopoly?
(b) How is the equilibrium position attained by a monopolist under varying cost Conditions?
4. Following are the Cash flows for two mutually exclusive projects which cost Rs.1,32,000 each. Assume the cost of capital to be 11%. Calculate NPV for both the projects and interpret the results.

Year	Cash Flows (A)	Cash Flows (B)
1	40,000	75,000
2	62,000	68,000
3	75,000	45,000

5. From the following information you are required to calculate.
 - (i) Margin of Safety,
 - (ii) Total sales
 - (iii) Variable cost from the following figures;

Fixed costs	Rs. 12, 000
Profit	Rs. 1, 000
Break-Even Sales	Rs. 60, 000
6. a) Define managerial economics. Illustrate how it helps in solving managerial problems.
b) What are its limitations BEP?
7. a) Explain Sealed bid pricing and Going rate pricing.
b) Explain different kinds of partnership.
8. Answer any TWO Questions of the following
 - a) Define Ratio analysis and explain its importance.
 - b) Analyses the Formation of Joint Stock Company?
 - c) What are the features of Perfect Competition?

5x2 Marks= 10Marks

Code No.: 52508

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III B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, MAY-2018

Subject: Mining Machinery

Branch: MINING

Time: 3 hours

Max. Marks: 60

PART – A

Answer ALL questions of the following

5x2Mark=10 Marks

1. Explain the Combustion of fuel in piston?
2. What are the reasons for re-capping of steel wire ropes at regular interval during its life?
3. Draw a labeled diagram of a mono-cable aerial ropeway bucket and briefly explain its principle of operation
4. What are the principal types conveyors used in mines? what are the applications of those conveyors
5. What are the relative advantages of down-the-hole drilling compared to conventional drilling?

PART-B

Answer any FIVE Questions of the following

5x10 Marks= 50Marks

1. Give a classification of mechanical brakes used in rope haulages and winding and compare them. Also explain with the help of neat labeled diagrams their construction and operation. The answers should also include the functions of each of the component of each of these brakes.
2. a) Differentiate direct rope haulage and endless rope haulage
b) Main and tail rope haulage
3. a) Write a note on twin cable rope way.
b) Discuss advantages and disadvantages of aerial ropeways
4. a) Explain the need for tensioning and troughing of belt conveyors. Also state the measures to be taken maintain alignment of the belt in horizontal direction.
b) Construction of Armoured Face Conveyor with reference to longwall mining.
5. Discuss various type of drills used in open cast mines along with their applications.
6. a) What is a Hydraulic power? Describe in detail one Hydraulic Equipment with sketches?
b) Statutory requirements of haulage.
7. a) Run-away of tubs of inclined haulage roadways
b) What are the different types of buckets used in aerial ropeways, Explain ?

8. Answer any TWO Questions of the following

5x2Marks= 10Marks

- a) Construction and operation of Jackhammer drill.
- b) Application of Aerial Ropeway in mine?
- c) Explain Safety appliances in haulage roadways?

