Code No.: **30722** **MR13**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

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

IV B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, NOVEMBER-2019

Subject: **MINE LEGISLATION**

Branch: **MINING**

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer ALL questions of the following **5x1M=5 M**

1. What is the provision for drinking water in underground mines?
2. What is the period for which prospecting licenses may be granted or renewed?
3. What do you mean by explosive according to explosive act, 1884?
4. Write the eligibility of workmen inspector.
5. How audio-visual aids create safety consciousness?

II. Answer ALL questions of the following **10x2M=20 M**

1. What is intrinsically safe apparatus or circuit as per IER, 1956?
2. What is "gassy seam of second degree"?
3. What is the permitted explosive quantity during solid blasting in degree I,II and III gassy mines?
4. What are the five cores of a flexible cable?
5. What is the role of safety organization?
6. What are the objectives of industrial relations?
7. Write the importance of vocational training in mines.
8. Write the functions of pit safety committee.
9. What is the role of management in industrial relations?
10. Briefly write role of safety officer.

PART-B

Answer ALL questions of the following **5x10 M= 50M**

1. What are the provisions for "facilities to be provided for occupational health survey" as per The Mines Act, 1952?

(OR)

2. Briefly explain the precautions against dust as per CMR, 1957.
3. What are the duties and responsibilities of manager as per Coal Mines Regulations, 1957?

(OR)

4. Briefly explain the words illegal mining, competent persons, owner and reportable injury.
5. What are the provisions for "general vocational training" and "refresher training" as per Mines vocational training rules, 1966?

(OR)

6. Explain the salient features of initial and refresher training as per MVT rules.
7. Briefly describe the duties and responsibilities of workmen's inspector.

(OR)

8. What are the occupational diseases in mining? Briefly explain them.
9. Explain role of safety officers in promoting and maintaining safety in mines.

(OR)

10. How organizations of safety weeks in mines help to improve the safety consciousness among miners?

Code No.: **40720** **MR14**

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IV B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, NOVEMBER-2019

Subject: **MINERAL PROCESSING**

Branch: **MINING**

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer ALL questions of the following **5x1M=5 M**

1. Define Liberation.
2. What is meant by jigging?
3. Define flotation.
4. What is meant by electrical separation?
5. What was the purpose of Demagnetisers in Magnetic separation process?

II. Answer ALL questions of the following **10x2M=20 M**

1. What are the different types of crushers?
2. Why beneficiation of minerals is required?
3. Differentiate between classifiers and cyclones.
4. What are the advantages and disadvantages of jigs?
5. What are the effects of reagent feeds?
6. What are the factors affecting frothers?
7. What are the different types by which charge on material is acquired?
8. What are the applications of dielectric separation methods?
9. What are the different types of magnetic separators?
10. Write any four applications of magnetic separation?

PART-B

Answer ALL questions of the following **5x10 M= 50M**

1. What are the objectives of mineral processing and write its advantages?

OR

2. Compare Jaw crusher with gyratory crusher.
3. Explain briefly about working of Jigs. What are the factors affecting stratification in jigging?

OR

4. What are classifiers? Explain about various types of classifiers.
5. Explain the working of fagergren flotation cell with nest sketch.

OR

6. Explain the working of Denver flotation cell with neat sketch.
7. Explain about high tension electric separator with neat sketch.

OR

8. Describe briefly about dielectric separation system.
9. Draw a simplified flow sheet for the various stages involved in the processing of iron and explain in detail.

OR

10. What are the different types of wet magnetic separators? Briefly explain about them.

Code No.: 40721

MR14

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II B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, NOVEMBER-2019

Subject: **ROCK MECHANICS**

Branch: **MINING**

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer ALL questions of the following **5x1M=5 M**

1. What is tensile strength?
2. What is horizontal stress?
3. What is meant by angle of draw?
4. What is bump?
5. What is meant by FEM?

II. Answer ALL questions of the following **10x2M=20 M**

1. What is meant by porosity?
2. What is meant by creep?
3. What is Tributary Area Method?
4. What is Convergence?
5. What is critical area?
6. What is NEW?
7. What is wedge failure?
8. What is circular failure?
9. What is the difference between FEM & FDM?
10. What is FLAC?

PART-B

Answer ALL questions of the following **5x10 M= 50M**

1. What is RMR? Describe the procedure for determination of RMR.

OR

2. What are Poison's ratio and Young's modulus? Describe the procedure for determination of them.
3. Design the supporting system for underground coal mine panel. Assume all necessary data.

OR

4. Write the following failure theories i. Mohr's coulomb ii. Hoek and Brown

5. What is Subsidence? Explain the various parameters influencing the subsidence with neat sketch.

OR

6. What is meant by point of inflection? Explain causes of subsidence.
7. What are the major factors influencing the stability of slopes? Explain it.

OR

8. Write various techniques for stabilizing the opencast dump.

9. Write the following (i) FEM (ii) Pascal triangle

OR

10. What are the input parameters required for numerical modeling? Explain it.

Code No.: 40744 **MR14**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

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IV B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, NOVEMBER-2019

Subject: **ROCK FRAGMENTATION ENGINEERING**

Branch: **MINING**

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer ALL questions of the following **5x1M=5 M**

1. What are the different types of drilling equipments?
2. What is delay element?
3. What is PPV?
4. What is air overpressure?
5. What is the distance of safety in surface blasting?

II. Answer ALL questions of the following **10x2M=20 M**

1. What is meant by rate of penetration?
2. List parameters to be considered for calculating drilling cost.
3. What is Sleep time?
4. How delay interval between holes and rows effect the generation of back break?
5. List the secondary blasting techniques.
6. What type of stemming materials are suitable to prevent stemming ejection?
7. What is cushion blasting?
8. Write a short note on cushion blasting.
9. How mean fragmentation sizes of blasted rock is obtained?
10. Briefly explain the gas component of detonation.

PART-B

Answer ALL questions of the following **5x10 M= 50M**

1. With neat sketches explain briefly about mechanics of rotary percussive drilling.

OR

2. Briefly explain the properties of rock that affect the drilling performance of a rock drill.
3. What is rock breaking mechanism? Discuss the pneumatic rock breaking system with neat sketch.

OR

4. What are the safety precautions to be taken care before and after blasting?
5. Discuss the effects and control measures of vibrations with neat sketch.

OR

6. What is fly rock in blasting? What are the main causes of fly rock? Briefly discuss the various methods to reduce fly rock.

7. What is controlled blasting? Discuss the various types of controlled blasting techniques.

OR

8. Write the threshold value of PPV for surface mining. How to predict the ground vibration due to blasting.
9. Describe the impact of ground vibration and sound on the neighboring structures.

OR

10. Describe the safety precaution to be taken during air over pressure from blasting.