Code No.: 40718 | MR14

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 II SEMESTER SUPPLEMENTARY EXAMINATIONS, MAY-2018

Subject: **Mine Mechanization-II**

Branch: **MINING**

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

PART – A

I. Answer ALL questions of the following **5x1Mark=5 Marks**

1. Where visor gear is used?
2. What is the function of depth indicator?
3. What is LHD?
4. What are different types of pumps?
5. What is a ripper?

II. Answer ALL questions of the following **10x2Mark=20 Marks**

1. What is capping and recapping of ropes?
2. Classify guides used in shaft winding system
3. Explain electrical and mechanical braking.
4. Write components of duty cycle of a winding system
5. Explain the purpose of SDL used in an underground coal mine?
6. Explain the factors to be considered for use of SDL in underground coal mines?
7. Name a few types of face machinery.
8. What does a shuttle car do?
9. What is a dipper shovel?
10. What do you understand by a continuous surface miner?

PART-B

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

1. What are the advantages and disadvantages of koepe winding?

[OR]

2. What are the different types of koepe winders known to you? Explain the koepe winding system with suitable diagrams, giving its application?
3. Explain slow braking and depth indicator.

[OR]

4. Draw the neat sketch of liquid controller for speed controller, and explain briefly construction and working of it.
5. What are the advantages of using LHD & SDL?

[OR]

6. Write construction and working principle of shearer with neat sketch
7. Water enter radially into the impeller 2.4 m/s with an angle 30°,and speed of impeller 1400 RPM, assume inlet velocity 1.7m/s ,discharge 300 lit per minute. if delivery pipe is $18\times10^{-2}\ m$ and losses 70%
   a) What is head gained in single stage? b) Incase 6 impeller are used, what is the total head gained? c) What is the width of the impeller?

[OR]

8. Detail drainage system with neat sketch of an underground working
9. Why bucket wheel excavator more advantages than dragline? Give details about various operation and economic aspect.

[OR]

10. Explain the main constructional features and applicability conditions of a continuous surface miner.

Code No.: **40717**

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

Subject: **Mine Environmental Engineering-II**

Branch: **MINING**

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

PART-A

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

1. What do you mean by incubation period?
2. What is the ignition temperature of Methane?
3. What is the volatile ratio of coal?
4. What are the units of sound?
5. Write about the purpose of i) Reducing Valve ii) By Pass Valve

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

1. Write 3 points about quenching fire in surface coal stock.
2. Briefly explain Graham index.
3. Compare between coal dust & firedamp explosion.
4. What are the fittings that a fire stopping should have?
5. Write any four factors on which inflammability of coal dust depends.
6. What are the lower limit and higher limit of explosibility of coal dust?
7. What are the measures against flooding of mine main entries?
8. Write different instruments used for measuring sound (or) noise.
9. Define candela power.
10. What are the advantages of self- contained liquid-oxygen breathing apparatus?

PART-B

Answer ALL Questions of the following **5x10M=50M**

1. Explain the factors governing spontaneous heating.

[OR]

2. a) Classify the mine fires?

   b) Write about foam type extinguisher and CO_2 type extinguisher?

3. Describe in brief the various methods of collecting samples of atmosphere from behind a sealed off area.

[OR]

4. The percentage of various gases in the return air of a normally working mine are as follows.

Oxygen	19.75
Nitrogen	78.73
Methane	0.92
Carbon Dioxide	0.58
Carbon monoxide	0.02

Calculate the CO/O_2 deficiency and CO_2/O_2 deficiency ratios?

5. Discuss the factors that affect the explosibility of coal dust in a mine.

[OR]

6. What procedure should an over man adopt when he is on a routine inspection of his district and comes to know of an explosion in some other district?
7. Explain about the environmental aspects of blast induced vibration and noise?

[OR]

8. What are the causes of inundation? Write about measures against surface causes.
9. Describe the manner of conducting an accumulation test and percentage test for methane gas with the help of a flame safety lamp.

[OR]

10. Describe an electric cap lamp with a suitable diagram of headpiece connections

Code No.: **30716/40716** | MR13 & MR14

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

Subject: **Underground Metal Mining Technology**

Branch: **MINING**

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

PART-A

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

1. What is level interval?
2. What is Alimak?
3. What is a special method of working?
4. Name different types of supports
5. What is in situ leaching?

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

1. Write different stages of metal mining.
2. What purpose a raise or winze serve?
3. What are the different types of special stoping methods used to extract metal deposits?
4. What is the basis of classification of the stoping methods?
5. What is sub level caving?
6. Write applicable conditions of block caving.
7. What is ground breaking?
8. Why haulage is required?
9. What do you understand by production & productivity
10. What do you understand by dilution of ore?

PART-B

Answer ALL Questions of the following **5x10M=50M**

1. Explain any layout of development of metal deposits showing levels, cross cuts, raises for working viens.

[OR]

2. Explain the different factors to be considered for primary development of a mineral deposit.
3. Explain any one mechanized method of raising with necessary sketch.

[OR]

4. Explain the influence of economic considerations in selecting a stoping method.
5. What are the precautions needed to be followed for stoping thin vein deposits?

[OR]

6. What is block caving? Explain with the help of sketch.
7. Define subsidence with a neat sketch.

[OR]

8. Discuss different auxiliary operations in stope under extraction.
9. Explain the different factors affecting the productivity.

[OR]

10. How accidents can be avoided in a underground metal mine?

Code No.: 30715/40715 | MR13 & MR14

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

Subject: **Mine Surveying-II**

Branch: **MINING**

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

PART-A

I. Answer ALL questions of the following **5 x 1M=5 M**

1. What is the principle of subtense method?
2. What is photographic camera?
3. What is weisbach triangle?
4. What is the use of focusing screw in total station?
5. What are the advantages of EDM?

II. Answer ALL questions of the following **10×2=20M**

1. Compute the radius of a simple curve of 6^0 deflection angle taking the chord length is 30m.
2. What are the linear methods of setting out curve?
3. What is flying height and flight line?
4. Define principal point and nodal point.
5. Enumerate the different methods of correlation of surface and underground surveys.
6. What is the importance of national grid?
7. How a slope distance is measured by a total station?
8. What type of coordinates are obtained from total station?
9. Describe in brief infrared instrument.
10. List out different modern instrument that are using in survey.

PART-B

Answer ALL questions of the following **5 x 10 M=50 M**

1. To determine the elevation of the first station A of a tacheometric survey, the following observations were made, the staff being held vertically. The instrument was fitted with an anallatic lens and the value of the constant was 100.

Instrument station	Height of instrument	Staff station	Vertical Angle	Staff readings	Remarks
0	1.440	B.M	$-5^0 40'$	1.332,1.896,2.460	R.L. of
0	1.440	C.P	$+8^0 20'$	0.780,1.263,1.746	B.M
A	1.380	C.P	$-6^0 24'$	1.158,1.617,2.076	= 158.205m

Calculate the reduced level of A.

(OR)

2. Two straights T_1V and VT_2 of a road curve meet at an angle of 80^0. Find the radius of curve which will pass through a point P, 30m from the P.I. (V), the angle T_1VP being 30^0.

3. Describe the laws of accidental errors. In carrying a line of levels across a river, the following eight readings were taken with a level under identical conditions:
   2.322, 2.346, 2.352, 2.306, 2.312, 2.300, 2.306, 2. 326.
   Calculate, (i) the probable error of single observation
   (ii) The probable error of the mean.

(OR)

4. Find the most probable values of the angles A and B from the following observations at a station O: A= 9°45'36.6" with wt. 2, B = 54°37'48.3" with wt. 3 and A+B = 104°26'28.5" with wt.4
5. a) State the basic principle of Remote Sensing? Describe the different platforms are used in Remote Sensing?
   b) What is GPS. Explain its uses in opencast mine.

(OR)

6. What is Remote sensing? What are the applications of remote sensing? How GIS data can be integrated with remote sensing.
7. a) A total station is placed over a terrain having ground elevation is 150 meter and height of instrument is 2.135 m. The distance between the total station and the target is 1000 meter and height of the target from the ground is 2 m. Find out the elevation of the ground beneath the reflector if zenith angle is 60^0?
   b) Write the types of surveys by using Total Station.

(OR)

8. What are the different measurements that can be taken by total station? Explain them briefly.
9. a) Define the term EDM? State the basic principle of EDM instruments?
   b) A wave transmitted from the point A and received at the point B. The whole number of wavelengths travelled by the wave is 6 and having wave length 20 m each. The phases of the wave at transmitted point A and received point B are 0^0 and 180^0 respectively. Calculate the distance between A and B?

(OR)

10. What are the statutory requirements for slope and height of bench in opencast mine.

Code No.: **30B04/40B04** | **MR13/ MR14**

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

Subject: **Human Values and Professional Ethics**

Branch: **Common to ME, ECE & MINING**

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

PART – A

I. Answer ALL questions of the following **5x1Mark=5 Marks**

1. Define Morals.
2. What is self discipline?
3. Define Trade marks.
4. What are basic human aspirations?
5. What is Negative Stress?

II. Answer ALL questions of the following **10x2Mark=20 Marks**

1. Discuss briefly the importance of Time Management.
2. Why you need to be more empathetic than sympathetic to others?
3. Discuss the concept of Self Interest?
4. Why understanding one's self is essential to understand others?
5. What is the difference between personal ethics and professional ethics?
6. Briefly describe ethical theories.
7. Discuss the meaning of Universal Brotherhood.
8. How value education impacts professional life?
9. What are the advantages of positive attitude?
10. Briefly describe learning skills

PART-B

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

1. Explain the process of time management.

(OR)

2. Commitment & cooperation are directly proportional. Explain?
3. Describe the process of self appraisal system.

(OR)

4. What is self-exploration? Write its need and purpose for an individual.
5. Explain Gilligan's theory based on gender of humans?

(OR)

6. What is the use of ethical theories on professional roles?
7. "Education without values is useless". Elucidate the statement.

(OR)

8. 'Value education plays an important role in creating an ideal society'. Elaborate.
9. Describe the influencing factors of stress on human health.

(OR)

10. Why an individual need to develop positive attitude?