

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-2019Subject: Mine Surveying-II

Branch: MINING

Time: 3 hours

Max. Marks: 75

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

1. Define apex of a curve.
2. What is meant by zenith angle?
3. What is weisbach triangle.
4. What is a total station?
5. What should be the height and slope of opencast coal bench?

II. Answer **ALL** questions of the following**10x2Marks=20 Marks**

1. What is degree of the curve in Arc definition and Chord definition?
2. Explain principle of tachometry.
3. Define latitude and longitude in geodetic astronomy?
4. Define the term aerial photogrammetry.
5. Write down the difference between GIS and RS.
6. What is national grid?
7. What type of coordinates are obtained from total station?
8. What are the measurements that can be taken by total station?
9. State the difference between Tellurometer and Geodimeter.
10. What is carrier wave?

PART-BAnswer **ALL** questions of the following**5x10 Marks= 50Marks**

1. a) Explain the procedure of rankine method of curve setting.
b) A circular curve has 300 m radius and 60° deflection angle. Calculate i) degree of curve
ii) length of curve iii) length of chord iv) tangent length v) mid-ordinate

OR

2. a) Explain a method of curve setting used in underground mines.
b) Two straight portions of underground roadway includes an angle of 140° are to be joined by a circular curve having a radius of 30m. The gauge of track is 1.05m, and the speed of train going round the curve is not to exceed 10kmph. Find tangent distance, the rise of curve, the length of curve and super elevation of the outer rail.

3. Define the following with neat diagram
a) Zenith b) Nadir c) Longitude d) Departure

OR

4. a) What are the coordinate systems used in geodetic astronomy. Explain any one with neat diagram.
b) The following are the three angles A, B and C observed at a station P closing the horizon, along with their probable errors of measurement. Determine their corrected values.

$$A = 78^{\circ} 12' 12'' \pm 2'' \quad ; \quad B = 136^{\circ} 48' 30'' \pm 4'' \quad ; \quad C = 144^{\circ} 59' 08'' \pm 5''$$

5. Describe the coplaning method of correlation survey for surface and underground workings of a mine.

OR

6. With the help of a neat diagram, describe an idealized remote sensing system.
7. Define Total Station? State the uses of the total station and advantages of total station.
a) Explain the fundamental measurements made by a Total Station?
b) Describe the procedure about mapping by using Total Station?

OR

8. Explain the different types of surveys by total station.
9. Write down the statutory requirements for mine plans and sections as per DGMS?

OR

10. Explain how surveying is important in field of mining.