

**R09**

Code No: 56096

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech III Year II Semester Examinations, April - 2018**

**MINE SURVEYING-II**

**(Mining Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any five questions  
All questions carry equal marks**

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- 1.a) Derive an expression for the horizontal distance D and the vertical intercept V when staff is vertical.  
b) Determine the distance between the instrument station P and the staff station Q from the following data:  
R.L of the instrument axis = 200.150 m  
Vertical angle =  $-3^{\circ}45'$   
Staff reading = 1.450, 0.900, 0.350 m  
Also determine the R.L of Q. Take  $K=100$  and  $C=0$  [7+8]
- 2.a) A simple curve has a radius of 500m. The tangent intersects at chainage 1000m and the angle of intersection is  $135^{\circ}$ . Find (i) tangent distance, (ii) chainage at beginning and end of curve, (iii) length of long chord and (iv) degree of curve.  
b) Explain the procedure for setting out a compound curve. [8+7]
- 3.a) Differentiate between terrestrial photogrammetry and aerial photogrammetry. What are the main uses of photogrammetry?  
b) What is an ideal projection? [10+5]
- 4.a) Explain any two methods for the determination of Latitude by solar observations.  
b) Discuss various methods for the determination of Longitude of a place. [8+7]
- 5.a) Explain the method of measurement of depth of shafts.  
b) Describe the procedure for measurement of depth of mine shaft with a neat sketch. [7+8]
- 6.a) Define GIS. What are the various sources from which data can be derived to be used for GIS?  
b) State the basic principle of Remote Sensing. Describe the different platforms that are used in Remote Sensing. [6+9]
- 7.a) List the uses of Total Station? What is ATR in Total Station?  
b) List the fundamental measurements by a Total Station. Describe the constructional features of Total Station with neat sketch? State the uses of the Total Station. [5+10]
- 8.a) List various GIS software used in mining field? Write short notes on Distomat.  
b) Explain the working principle of Electro Magnetic Distance measuring system? Write down the methods of open pit surveying. [6+9]