

17 AUG 2013

R16

Code No: 133BU

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.Tech II Year I Semester Examinations, November/December - 2018****SURVEYING**
(Common to CE, CEE)**Time: 3 Hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks and may have a, b, c as sub questions.

PART-A**(25 Marks)**

- 1.a) What are the primary classifications of surveying? [2]
- b) What are the advantages of observing back bearing in a closed traverse? [3]
- c) What do you mean by the following terms?
i) Meridian distance ii) Double meridian distance iii) Double parallel distance. [2]
- d) What are the methods of determination of area from plan? [3]
- e) What are the conditions to be satisfied in a closed theodolite traverse? [2]
- f) What are advantages of traversing over triangulation? [3]
- g) What are the advantages of Tacheometric surveying over other methods? [2]
- h) What is meant by Shift of a curve? [3]
- i) Mention advantages of using Total station. [2]
- j) Explain briefly the working principle of GPS. [3]

PART-B**(50 Marks)**

- 2.a) Give in a tabular form, the difference between prismatic compass and surveyor's compass. [6+4]
 - b) Describe how you would range a survey line between two points which are not intervisible. [6+4]
- OR**
- 3.a) Define surveying. What are the principles of surveying? Explain them briefly. [5+5]
 - b) What is Magnetic declination? What are different types of variation in declination? [5+5]

4. What is meant by "area of zero circle" of a planimeter? How would you determine it? [10]

OR

- 5.a) Discuss the characteristics of contours. Give suitable sketches. [5+5]
 - b) Explain the method of computation of volume by Prismoidal formula. [5+5]
- 6.a) Explain the temporary adjustments of a transit. [5+5]
 - b) What are various checks to be performed on closed and open traverse? [5+5]

OR

7. Form the elevation of the chimney from the following data
- | Instrument Station | Reading on B.(m) | Angle of elevation | Remarks |
|--------------------|------------------|--------------------|-------------|
| A | 0.862 | $18^{\circ}36'$ | R.L of B.M. |
| B | 1.222 | $10^{\circ}12'$ | =421.380m |

Distance AB=50m

Stations A and B and the top of chimney are in the same vertical plane. [10]

- 8.a) What do you understand by tacheometry? Discuss the errors in stadia surveying.
b) List the various methods of setting out a simple circular curve. [5+5]

OR

9. Two straights AC and BC meet at an inaccessible point C. They are to be connected by a simple curve of radius 12 chains. Two points P and Q are selected on AC and BC respectively and the following measurements are made, Angle APQ= 160° ; Angle BQP= 164° ; PQ=86m. Chainage of P=71.546 chains.

Determine:

- The deflection angle of the curve
- Tangent length
- Length of the curve
- Chainage of the end points of the curve

Take 1 chain=20m.

[10]

- 10.a) Describe the salient features of a total station and explain how angles are measured using it.

- b) How ambiguity of the distance measured is removed in an EDM instrument. Illustrate with an example. [5+5]

OR

- 11.a) Write a short note on the errors in EDM.

- b) Suggest possible users of a GPS and how it might benefit them.

[5+5]