



PAPER ID : 0047

TCE-302

Printed Pages : 3

Paper ID and Roll No. to be filled in your Answer Book

Roll No.

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B. Tech.

(SEM. III) (ODD SEM.) (REG. & BACK) EXAMINATION, 2012-13

BASIC SURVEYING

Time : 2 Hours]

[Total Marks : 50

Note : (i) Attempt all questions.

(ii) Marks are shown in the margin against each question.

(iii) Draw neat sketches wherever necessary.

1. Attempt any four parts of the following : (4×3.5=14)
- (a) Describe Principles of Surveying with neat sketch.
 - (b) Define Surveying. What are primary divisions of Surveying?
 - (c) Enumerate various tape corrections. Derive an expression for correction in length for sloping ground.
 - (d) What is declination? The magnetic bearing of a line was found to be N 60° 30' W in 1956 when the declination was 5° 10' E. Find its present magnetic bearing if declination is 3° W at present.
 - (e) Differentiate between True meridian and Magnetic meridian. Describe the Bowditch rule for adjusting a compass traverse.
 - (f) Describe briefly the salient features of total station & EDM.

2. Attempt any three parts of the following :

(3×4=12)

- (a) Differentiate between direct leveling and indirect leveling. Describe, in brief, the various methods of direct leveling.
- (b) In order to find the difference in elevation between two points A and B, a level was set up on the line AB, 50 m from A and 1300 m from B, A and B being on the same side of the instrument, The readings obtained on staff held at A and B were 0.435 m and 3.950 m respectively. Find the true difference in elevation between A and B.
- (c) Define a Contour. Describe the various characteristics of contour lines.
- (d) In the tangential method of tachometry, two vanes were fixed at an interval of 1 m on a 3 m staff with the bottom vane at 1.0 m. The staff was held vertical at station A and the vertical angles measured for the two vanes were $5^\circ 30'$ and $3^\circ 15'$, respectively. Find the reduced level and horizontal distance of A, if the R.L. of a B. M. was 400 m.

3. Attempt any two parts of the following:

(2×6=12)

- (a) What is the purpose of curve? Describe the various elements of simple circular curve with the help of neat sketches.
- (b) Two tangents intersect at a chainage of 1022 m, the deflection angle being 36° . Calculate all the necessary data for setting out a circular curve of radius 300 m by the method of offsets from the chord produced, taking a neg interval of 20 m.

4.

- (c) What are the essential requirements of a transition curve? Derive an expression for an ideal transition curve.

Attempt any three parts of the following

(3×4=12)

- (a) Table below gives the length & bearing of the lines of traverse ABCDE, the length & bearing of EA having been omitted. Calculate the length and bearing of the line EA :

Line	Length (m)	Bearing
AB	204	87°
BC	226	20°
CD	187	280°
DE	192	210°
EA	?	?

- (b) Explain triangulation field work in detail.
- (c) State the advantages and disadvantages of plane tabling.
- (d) What is resection? Explain resection by three point Problem.