

Roll No. 

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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(CE) (2018 Batch)/(ECE) (Sem.-3)

### SURVEYING

Subject Code : BTCE-301-18

M.Code : 76370

Time : 3 Hrs.

Max. Marks : 60

#### INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

#### SECTION-A

1. Write briefly :

- a) What are the various types of horizontal curves? Draw figures of each type.
- b) What do you mean by balancing of the traverse?
- c) Differentiate between plane surveying and geodetic surveying.
- d) Explain the objective and basic principle of triangulation.
- e) What do you mean by apex and versed sine?
- f) What is latitude and departure?
- g) Write **any two** characteristics of Earth Resources Satellite.
- h) How many satellites are minimum required to get the exact location with the help of GPS.
- i) How contouring is relevant to levelling?
- j) What do you mean by stereoscopy?

## SECTION-B

2. What are the various types of EDM instruments? Explain.
3. Why is the GPS signal so complicated?
4. A vertical photograph is taken with a camera of focal length 350 mm from an elevation of 2500m above the ground. The terrain is nearly flat. What is the photo scale?
5. Explain the temporary adjustments of a theodolite.
6. Describe the procedure to determine the difference in elevation of the instrument station and top of chimney if the base of the chimney is inaccessible.

## SECTION-C

7. Two points A and B are on opposite sides of a summit. The tachometer was set up at P on top of the summit, and the following readings were taken :

Instrument Station	Height of Instrument	Staff Station	Vertical Angle	Hair Readings	Remarks
P	1.5	A	$-10^{\circ}0'$	1.15,2.05,2.95	R.L. of P = 450.50m
P	1.5	B	$-12^{\circ}0'$	0.855,1.605,2.355	

The tachometer is fitted with an anallactic lens, the multiplying constant being 100. The staff held normal to the line of sight. Find the distance between A and B.

8. Explain various segments of GPS System along with neat sketches.
9. What is Total station? Explain various parts of total station? What are the advantages and application of the Total station? What are the different errors associated with total station survey.