

B.E. / B.Tech. Civil Engineering (Model Curriculum) Semester-III  
**003 / PCC-CE303 - Surveying & Geomatics**

P. Pages : 2

Time : Three Hours



**GUG/S/25/13711**

Max. Marks : 80

- Notes :
1. All questions carry equal marks.
  2. Due credit will be given to neatness and adequate dimensions.
  3. Assume suitable data wherever necessary.

1. a) State the distinguish between prismatic and surveyor compass. 4
- b) What are the principle of surveying? 4
- c) A 20 cm chain was tested before the commencement of work and found to be correct. After chaining 840 m, the chain was found to be 0.08 m too long. At the end of work, after chaining distance of 1376 m the chain was found to be 0.12 m too long, what is the true distance chained. 8

**OR**

2. a) The following consecutive reading were taken with a level. 8  
2.375, 1.730, 0.615, 3.450, 2.835, 2.070, 1.835, 0.985, 0.435, 1.630, 2.255 and 3.630 m.  
The instrument was shifted after fourth and eighth readings. The last reading was taken on aBM of RL 110.200 m. Find RL of all points.
- b) What are the instruments for setting out right angles. 4
- c) What is mean by local attraction. How it is detected. 4
3. a) What are the fundamental lines of transit theodolites. Explain relation between them. 6
- b) The following records are obtained in a traverse survey were the length & bearing of the last line were not recorded: 10

Line	Length (m)	Bearing
AB	75.50	30°24'
BC	180.50	110°36'
CD	60.25	210°30'
DE	?	?

Compute length and bearing of line DA.

**OR**

4. a) A tacheometer is set up at an intermediate point on a traverse course PQ and following observations are made on a vertically held staff. 10

	Staff Station Vertical Angle	Staff Intercept	Axial Hair Reading
P	+6° 20'	2.46	1.675
Q	+4° 30'	1.86	1.880

The instrument is fitted with an analectic lens and the constant is 100. Find the gradient of the line joining station P and Q.

- b) Explain contouring and use of contour maps. 6
5. a) Write short note on: 10
- i) Towers and Signals
- ii) Satellite Station
- b) Explain phase signal & their corrections. 6

**OR**

6. a) Give the classification of triangulation system. 8
- b) Write various correction applied to base line measurement. 8
7. a) Explain vertical, tilted and oblique photograph. 8
- b) A scale of an aerial photography is  $1\text{km} = 100\text{ m}$ . The photograph size is  $20 \times 20\text{ cm}$ . Determine the no. of photographs required to cover an area of  $10\text{km} \times 10\text{km}$  if longitudinal overlap is 60% and side overlap is 30%. 8

**OR**

8. a) State uses of Photogrammetry. 6
- b) What are Component of GIS. 5
- c) State application of GIS in Civil Engineering. 5
9. a) Explain the concept of GPS. 8
- b) What is electromagnetic spectrum. 8

**OR**

10. Write short note on: 16
- 1) Remote Sensing
- 2) Total Station
- 3) EDM
- 4) GPS

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