



(Pages : 2)

1990

Reg. No. :

Name :

Fourth Semester B.Tech. Degree Examination, May 2014
(2008 Scheme)
Branch : CIVIL
08.405 : Surveying – II

Time : 3 Hours

Max. Marks : 100

Instruction : Answer all questions from Part A and Part B.

PART – A

- I. 1) Explain briefly the classification of triangulation.
- 2) What are the different types of signals used in triangulation ?
- 3) What are the different types of errors ?
- 4) Distinguish between Reverse curve and transition curve.
- 5) What are the elements of a simple curve ?
- 6) What are the various systems of coordinates in Astronomical surveying ?
- 7) Explain flight planning.
- 8) What are the different types of EDM instruments ? **(8×5=40 Marks)**

PART – B

Module – I

- II. a) Explain satellite stations and reduction to centre. **8**
- b) From a satellite station S, 10 m from station A the following directions were observed.
A – $00^{\circ} 00' 00''$ B – $140^{\circ} 20' 00''$
C $245^{\circ} 30' 25''$ D $305^{\circ} 15' 35''$
If the length of the sides AB, AC and AD are 3350.54 m, 4132.43 m and 3145.8 m respectively. Determine the directions of AB, AC and AD. **12**

OR

- c) Distinguish between 'station adjustment' and 'figure adjustment' in theory of errors. **10**

P.T.O.



- d) Adjust the angles P, Q, R and S which close the horizon
- | | | |
|---------------------------------|-------|----|
| $\angle P = 100^\circ 30' 22''$ | wt. 1 | |
| $\angle Q = 80^\circ 40' 10''$ | wt. 2 | |
| $\angle R = 90^\circ 20' 8''$ | wt. 3 | |
| $\angle S = 88^\circ 29' 25''$ | wt. 4 | 10 |

Module – II

- III. a) What are the different types of vertical curves ? 5
- b) The following data refer to a right-hand compound curve
- | | | |
|---------------------------------------|--------------|--|
| Total deflection angle | = 80° | |
| Radius of the first arc | = 200 m | |
| Radius of the second arc | = 250 m | |
| Chainage of the point of intersection | = 1504.80 m | |
| Deflection angle of the first arc | = 50° | |
- Determine the chainages of the point of curvature, the point of compound curve and the point of tangency. 15

OR

- c) Explain celestial sphere. 5
- d) Determine the hour angle and declination of a star from the following data :
- | | | |
|-----------------------|--------------------|----|
| Latitude of the place | = $48^\circ 30' N$ | |
| Azimuth of the star | = $50^\circ N$ | |
| Altitude of the star | = $28^\circ 24'$ | 15 |

Module – III

- IV. a) Write short notes on :
- 1) Parallax bar
 - 2) Mirror stereoscope.
- With sketches. 10
- b) In a photogrammetric survey, The scale of the photograph is 10 cm = 100 m. The photograph size is 23 cm × 23 cm. Determine the number of photographs required to cover an area of 15 Km × 10 Km if the longitudinal overlap is 60% and side overlap is 30%. 10

OR

- c) Explain the field procedure of Electronic Distance Measurement. 10
- d) Write the principle and procedure of surveying using Total Station. 10