

Roll No. ....

**2155**

**B. E. 4th Sem. (Civil Engineering)  
Examination, May, 2012**

**Surveying - II**

**Paper : CE-210-E**

**Time : Three Hours]**

**[Maximum Marks : 100**

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complain in this regard, will be entertained after examination.*

**Note :** Attempt five questions. Each question carry equal marks.

1. (a) An instrument was set up at P and the angle of elevation to a vane 4 m above the foot of the staff held at Q was  $9^{\circ} 30'$ . The horizontal distance between P and Q was known to be 2000 meters. Determine the R.L. of the staff station Q, given that the R.L. of the instrument axis was 2650.38. 10
- (b) Explain the procedure used in trigonometrical leveling for determining the base of the inaccessible object, when the instrument stations are in the same vertical plane with the elevated object. 10
2. (a) Describe different triangulation figures along with the criteria for their selection. 10

- (b) What is Reconnaissance survey ? Explain different types of operation can be conducted through this survey. 10
3. (a) Explain the principles of least squares. 10  
(b) Describe different methods of determining the most probable value. 10
4. (a) Describe the methods of determining Azimuth by astronomical observations. 10  
(b) Explain star at horizon and Prime verticals. 10
5. Explain (any *four*) the following terms : (5 marks each)  
(i) Equation of time  
(ii) Celestial pole and horizon  
(iii) Photogrammetry  
(iv) Zenith and Nadir  
(v) Solar time
6. (a) Explain the method of height determination from parallax measurement. 10  
(b) Explain the method of plotting by radiline method. 10
7. What is remote sensing technique ? Describe the role of electromagnetic Radiations in remote Sensing techniques. 20
8. Describe different components, data input, storage and output mechanism of GIS & GPS systems. 20
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