

B. TECH IN CIVIL ENGINEERING (BTCLEVI)**Term-End Examination****June, 2011****BICE-004 : ADVANCE SURVEYING***Time : 3 hours**Maximum Marks : 70**Note : Attempt any seven questions.**All the questions are to be answered in English Language only.*

1. What is sounding ? Discuss the method of solving three - point problem in detail. 10
2. To determine the elevation of A, the following observations were made in a lacheometric survey, the staff being held vertically. The instrument is fitted with an anallactic lens and the value of the constant is 100. RL of BM is 158.025. 10

Instrument station	Height of instrument	Staff station	Vertical angle	Staff reading
0	1.440	BM	$-5^{\circ}40'$	1.332, 1.896, 2.460
0	1.440	CP	$8^{\circ}20'$	0.780, 1.263, 1.746
A	1.380	CP	$-6^{\circ}24'$	1.158, 1.617, 2.076

Calculate the reduced level of A.

3. What is simple circular curve ? Explain clearly as to how you would set out a simple curve by Rankine's method of Tangential Angles.
4. Derive an expression for the length of transition curve and shift of the circular curve.
5. What are the requirements of a site selected for a base line in triangulation survey ? What equipments are necessary to measure a base line accurately ?
6. List different types of EDM instruments. Explain how does measurement with EDM instruments differ from taping. What are the advantages of EDM measurements ?
7. (a) From an instrument set up at A, with line of collimation at 2002.8 m the object P was sighted at an angle of depression $4^{\circ}42'$. The horizontal distance between the object and the instrument station is 2000 m. Find RL of P.

(b) Discuss with diagram Celestial latitude and longitude system.

8. Explain what is relief displacement and how it is calculated ? The distance from the principal point to an image on a photograph is 6.44 cm and the elevation of the object above datum is 250 m. What is the relief displacement of the point if datum scale is 1 : 10000 and focal length is 20 cm ? 10
9. Explain real remote sensing process. How do they differ from ideal requirement ? 10
10. Attempt any *two* of the following : 2x5=10
- (a) Subtense Bar.
 - (b) Stereoscopy.
 - (c) The Zones of the Earth.
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