

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

June, 2016

00586

BICE-004 : ADVANCE SURVEYING

Time : 3 hours

Maximum Marks : 70

Note : Attempt any **five** questions. All questions carry equal marks. Use of scientific calculator is permitted.

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1. (a) What are the different types of tacheometric measurements ? Briefly explain the principle of each type. 6
- (b) In tacheometric surveying, the readings of 3 diaphragm webs on a staff held at a distant point were recorded as 0.650, 0.990 and 1.320 mts, with the telescope held horizontally. If the multiplying and additive constants were 100 and 0.5 respectively, calculate the distance of the staff from the instrument station. If the R.L. of the instrument station was 25.250 m and height of line of sight was 1.45 m, determine the R.L. of the staff station. 8

2. (a) Find the relationship between the degree of a curve and its radius. 6
- (b) Explain clearly as to how you would set out a simple curve by Rankine's method of deflection angles. Derive the expressions for deflection angles. 8
3. Explain "Reduction to centre applied to triangulation" in detail. 14
4. (a) An instrument was set up at a point A. With horizontal sight when staff was held at a benchmark of 500 m, the reading was 3.56 m. The distance of a point P from A was 2500 m and P was at an angle of elevation $5^{\circ}30'$. Determine the R.L. of P. Apply curvature and refraction corrections. 10
- (b) Define Zenith and Nadir in astronomical survey. 4
5. (a) What is Relief displacement ? Discuss the utilization of relief displacement. 8
- (b) Define Remote Sensing. Write the advantages of satellite images in detail. 6
6. (a) What is Hydrographic Surveying ? Write the applications of hydrographic surveying. 6
- (b) What is total station ? Briefly explain its various components. 8

7. Write short notes on any **four** of the following : $4 \times 3 \frac{1}{2} = 14$

- (a) Radiometric Resolution
 - (b) Functions of Transition Curves
 - (c) Well Conditioned Triangle
 - (d) Uses of Astronomical Survey
 - (e) Fiducial Marks in Aerial Photography
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