

B.TECH. CIVIL ENGINEERING (BTCLEVI)**Term-End Examination****June, 2014****BICE-002 : SURVEYING***Time : 3 hours**Maximum Marks : 70*

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- Note :** (i) Answer *any five* questions.
(ii) Assume missing data if any.
(iii) Use of scientific calculator is *permitted*.
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1. (a) Discuss the classifications of surveying based on : 7
 - (i) Instruments used
 - (ii) Objective of survey
 - (iii) Methods employed
- (b) Explain any four methods for determining the width of a river. 7

2. (a) Explain with a neat sketch the working of a prismatic compass. 7
- (b) The following interior angles were measured with a sextant in closed traverse. The bearing of the line AB was measured as 60° with prismatic compass. Calculate the bearings of all other lines if, $\angle A = 140^\circ 10'$, $\angle B = 90^\circ 8'$, $\angle C = 60^\circ 22'$, $\angle D = 69^\circ 20'$. 7

3. (a) Define the following terms used in levelling : 8
 - (i) Bench Mark
 - (ii) Elevation
 - (iii) Change point
 - (iv) Mean sea level
- (b) Differentiate between fly levelling and reciprocal levelling. 6

4. The following observations were taken in reciprocal levelling : 14

Instrument at	Staff reading on		Remarks
	A	B	
A	1.545	2.565	Dist. AB = 1420 m
B	0.725	1.935	RL of A = 108.360

Find :

- (a) true RL of B
 - (b) the combined correction for curvature and refraction and
 - (c) the angular error in the collimation adjustment of the instrument
5. (a) Explain the two methods of orientation of plane table. 7
- (b) Describe the intersection method with a neat sketch. 7
6. (a) Explain the temporary adjustment of transit theodolite. 7
- (b) Explain the methods of 'Repetition and Reiteration' for measuring horizontal angle. 7
7. Write a short notes on **any two** of the followings :
- (a) Open cross staff 7x2=14
 - (b) Barometric levelling
 - (c) Radiation method
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