

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

00785 **December, 2014**

BICE-002 : SURVEYING

Time : 3 hours

Maximum Marks : 70

Note : Answer any **five** questions. Assume missing data, if any. Use of scientific calculator is permitted.

1. (a) What are the basic principles of surveying ?
Explain with neat sketches. 7
- (b) Explain the use and working of the following : 7
 - (i) Open Cross-staff
 - (ii) Prism Square
2. (a) Differentiate between Prismatic compass and Surveyor's compass. 7
- (b) At a point P, the magnetic bearing of a line PQ is 160° , while its true bearing is 155° . If the magnetic bearing of another line PL is 3° , find its true bearing. 7
3. (a) Differentiate between the following : 7
 - (i) GTS bench mark and Temporary bench mark.
 - (ii) Height of collimation and RL of a point.
- (b) Describe the inherent methods of reduction of levels with their merits and demerits. 7

4. The following staff readings were taken with a level, the instrument having been moved after third, sixth and eighth readings :

2.225, 1.625, 0.985, 2.095, 2.795, 1.265,
0.605, 1.980, 1.045, 2.685 m

Enter the above readings in a page of level book and calculate the RL of points. The first reading was taken on a benchmark of RL 100.00 m. Use the rise and fall method.

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5. (a) List the accessories of a plane table. Explain how you would set and orient the plane table. 7
- (b) Explain the two-point problem and its solution. 7
6. (a) Differentiate between Face left and Face right conditions in the theodolite survey. 7
- (b) What are the different sources of errors in a theodolite survey ? Give at least three examples of each source of error. 7

7. Write short notes on any *two* of the following :

$2 \times 7 = 14$

- (a) Reciprocal Levelling
(b) Profile Levelling
(c) Intersection method