

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

December, 2016

00953

BICE-002 : SURVEYING

Time : 3 hours

Maximum Marks : 70

Note : Attempt any **five** questions. All questions carry equal marks. Assume missing data, if any. Use of scientific calculator is permitted.

1. (a) Describe the classification of surveys based upon the nature of the work. 6
- (b) Differentiate between accuracy and precision. 4
- (c) Define Geodetic and Plane surveying. 4
2. (a) Convert the following quadrantal bearings into whole circle bearings and find their back bearing : 8
N67E, S31E, N26W and S43W
- (b) During a traverse survey ABCDA, the following interior angles were measured with a compass :
 $\angle A = 75^\circ$, $\angle B = 120^\circ$, $\angle C = 80^\circ$ and $\angle D = 85^\circ$
If the bearing of the line AB is 99° , what are the bearings of the remaining lines of the traverse ? 6

3. Explain with sketches, the different methods of locating a point by plane table. Discuss the relative merits of these methods. 14
4. (a) Explain with a neat sketch, the different parts of a dumpy level. 7
 - (b) Write the various steps involved in levelling using the height of instrument method. 7
5. (a) Draw a neat sketch of a vernier theodolite and explain the functions of its various parts. 8
 - (b) What are the temporary and permanent adjustments for theodolite? 6
6. (a) Explain the use and working of a line ranger with neat sketch. 7
 - (b) What do you understand by indirect ranging? Describe it in detail. 7
7. Write short notes on any **four** of the following : $4 \times 3 \frac{1}{2} = 14$
 - (a) Benchmark
 - (b) Latitude in Survey
 - (c) Curvature in Levelling
 - (d) Alidade in Plane Table Survey
 - (e) Well-conditioned Triangle
 - (f) Centering