

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

June, 2018

00443

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) Explain the purpose of surveying, in detail. 5
- (b) Discuss, in detail, the procedure of chain surveying. 6
- (c) List various instruments used in chain surveying. 3
2. (a) Discuss different sources of errors in compass surveying. 6
- (b) Explain, with the help of a suitable example, the calculations of bearings and included angles. 8

3. (a) Discuss the procedure of setting up the plane table. 6
- (b) Explain the method of reciprocal ranging. 6
- (c) Differentiate between magnetic bearing and true bearing. 2
4. (a) Readings taken in order during a levelling work are given below. Tabulate them suitably and find the reduced levels of all the points if the RL of the first point A is assumed to be 100.000. 10

<i>Staff Station</i>	<i>Back Sight</i>	<i>Intermediate Sight</i>	<i>Fore Sight</i>
A	0.684		
B		1.246	
C	0.864		1.105
D		1.684	
E		0.964	
F	2.845		1.368
G			0.748

- (b) What do you understand by differential levelling and local attraction ? 4
5. (a) Discuss the operation and adjustments of a theodolite, in detail. 10
- (b) Discuss the various errors, commonly encountered in theodolite surveying. 4

6. Write short notes on the following :

$$4 \times 3 \frac{1}{2} = 14$$

- (a) Bowditch's Method
- (b) Dumpy Level
- (c) Ranging Rods
- (d) Prismatic Compass

7. (a) Explain the use and working of open cross-staff and prism square.

8

(b) Explain the effects of curvature and refraction in levelling.

6

