BICE-002

B.Tech. CIVIL ENGINEERING (BTCLEVI)
Term-End Examination
June, 2019

00655

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) What is Surveying ? How is it useful for public and civil engineering ?   8

    (b) Distinguish between :   6
        (i)   Plans and Maps
        (ii) Geodetic Surveying and Plane Surveying

2. (a) Explain Direct Ranging and Indirect Ranging with suitable diagrams.   6

    (b) The length of a line measured with a 20 m chain was found to be 650·50 m. It was afterwards found that the chain was 0·10 m too long. Find the true length of the line.   4

    (c) Write the expression for correction of sag for the measured length of chain. Describe each term used in the expression.   4

3. (a) Explain how the closing error in compass survey is adjusted by Bowditch's method. *7*

(b) Differentiate between Prismatic compass and Surveyor's compass. *7*

4. (a) The following consecutive readings were taken with a level and 4 m staff on a continuously sloping ground at a common interval of 20 metres :

0·855 (on Q), 1·545, 2·335, 3·115, 3·825, 0·455, 1·380, 2·055, 2·855, 3·455, 0·585, 1·155, 1·850, 1·850, 2·755 and 3·845 (on R).

Enter the readings as on a field book page, reduce the levels, apply the checks and determine the gradient of line QR. *10*

(b) What is the effect of curvature in levelling ? Write the formula for the correction due to curvature. *4*

5. (a) What is Plane Table Surveying ? What are its advantages and disadvantages ? Mention the errors in plane tabling. *10*

(b) List the equipments used in plane table survey. *4*

6. (a) Explain the temporary adjustment of transit theodolite. *6*

(b) Explain as to how you will measure horizontal angle by the method of repetition. *8*

7. (a) Discuss in brief, different types of cross staff. 7

(b) Describe Resection method of Plane Table Surveying. 7

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

(a) Field Book

(b) Local Attraction and Magnetic Dip

(c) Bench Mark

(d) Well-conditioned Triangle

(e) Characteristics of Contour Lines