| BICE-004 |

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

□□7=43

December, 2016

BICE-004 : ADVANCE SURVEYING

Time : 3 hours   *Maximum Marks : 70*

*Note : Attempt any **five** questions. All questions carry equal marks. Use of scientific calculator is permitted.*

1. (a)   Write the advantages of Tacheometric surveying in detail.   *4*

    (b)   A vertical staff is observed with a horizontal external focussing telescope at a distance of 113·0 m. The measurements of the telescope are recorded as :

          Objective to diaphragm = 200 mm

          Objective to vertical axis = 150 mm

          If the readings taken on the staff were 1·100 m, 1·66 m and 2·220 m, calculate

          (i)   the distance between stadia, and

          (ii) the constants k and c.   *10*

2. (a) Discuss the requirements of Transition curve. *4*

(b) A circular curve has 300 m radius and 60° deflection angle. What is its degree by (i) arc definition, and (ii) chord definition of standard length 30 m ? Also calculate the (iii) length of the curve, and (iv) tangent length. *10*

3. (a) List different types of EDM instruments and briefly write about each of them. *10*

(b) Explain the objectives of Triangulation survey in detail. *4*

4. (a) Discuss the zones of the Earth based upon parallels of latitude in detail with suitable neat sketch. *8*

(b) Enlist the equipments for measurement of hydrographic depth. Explain any one of them. *6*

5. (a) Discuss the term overlap in aerial photogrammetry in detail. *6*

(b) Explain Remote sensing system in detail with neat sketch. *8*

6. What are the requirements for selection of site for a base line in Triangulation survey ? What equipments are necessary to measure a base line accurately ? *14*

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

    (a)   Subtense Bar

    (b)   Sounding

    (c)   Advantages of Anallactic Lens

    (d)   Use of Astronomical Survey

    (e)   Advantages of using Total Station

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