

B.Tech. CIVIL ENGINEERING (BTCLEVI)**Term-End Examination****December, 2015****BICE-004 : ADVANCE SURVEYING***Time : 3 hours**Maximum Marks : 70*

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

1. (a) What is meant by three-point problem in hydrographic surveying ? How is it solved mechanically ? 2+5
- (b) What is the purpose of a shore line survey ? 3

2. Derive an expression for the horizontal distance and elevation when the instrument is fitted with a stadia diaphragm only and the line of sight is horizontal. 10

3. Explain and draw the following for a circular curve : 10
- (a) Right-hand Curve
 - (b) Back Tangent
 - (c) Point of Intersection
 - (d) Intersection Angle
 - (e) Apex or Summit of Curve
4. (a) Explain, in brief, the method to mark a Triangulation Station. 5
- (b) Write the points to be considered for selecting the site for base line. Enumerate the methods used in base line measurement. 5
5. From an instrument set up at A, with line of collimation at 2002.8 m, the object "P" was sighted at an angle of depression $4^{\circ} 42'$. The horizontal distance between the object and the instrument station is 2000 m. Find the R.L. of "P". Apply curvature and refraction corrections. 10
6. Find the shortest distance between two places, A and B on the Earth for the data given below : 10
- Latitude of A = $14^{\circ} N$
 - Longitude of A = $60^{\circ} 30' E$
 - Latitude of B = $12^{\circ} N$
 - Longitude of B = $65^{\circ} E$
7. (a) Explain the principle of Remote Sensing System with a neat sketch. 5
- (b) Write the applications of Remote Sensing. 5

8. Explain the following terms for aerial photographs :

$$4 \times 2 \frac{1}{2} = 10$$

- (a) Camera Axis
- (b) Principal Point
- (c) Fiducial Mark
- (d) Film Base

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

$$2 \times 5 = 10$$

- (a) Types of EDM Instruments
- (b) Principal of Total Station
- (c) Stereoscopy

10. Write short notes on any *four* of the following :

$$4 \times 2 \frac{1}{2} = 10$$

- (a) Geostationary Satellites
 - (b) Stadia Cross Hairs
 - (c) Transition Curve
 - (d) Sounding
 - (e) Objects of Triangulation Survey
 - (f) Spectral Resolution
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