

DIPLOMA IN CIVIL ENGINEERING
DCLE(G) / DCLEVI

Term-End Examination

00510

June, 2016

BET-023 : ELEMENTS OF SURVEY

Time : 2 hours

Maximum Marks : 70

Note : *Question no. 1 is compulsory. Attempt any four questions from the remaining. All questions carry equal marks.*

1. Select the most appropriate answer for each of the following questions : 7×2=14
- (a) The survey in which the curvature of the Earth is taken into account is called
- (i) Plane Survey
 - (ii) Preliminary Survey
 - (iii) Geodetic Survey
 - (iv) Hydrographic Survey
- (b) The angle of intersection of the two plane mirrors of an optical square is
- (i) 45°
 - (ii) 60°
 - (iii) 90°
 - (iv) 30°

- (c) The type of survey which requires least office work is
- (i) Theodolite Surveying
 - (ii) Plane Table Surveying
 - (iii) Trigonometric Levelling
 - (iv) Tacheometry
- (d) If the fore bearing of a line is 30° , the back bearing is
- (i) 0°
 - (ii) 180°
 - (iii) 210°
 - (iv) 150°
- (e) Which of the following methods of plane table surveying is used to locate the position of an inaccessible point ?
- (i) Radiation
 - (ii) Intersection
 - (iii) Traversing
 - (iv) Re-section
- (f) The operation consisting of revolving the telescope through 180° in a vertical plane about its horizontal axis is called
- (i) Transiting
 - (ii) Face Left
 - (iii) Face Right
 - (iv) Traversing

- (g) A fixed point of reference, whose elevation is known is called
- (i) Reduced Level
 - (ii) Bench Mark
 - (iii) Changing Point
 - (iv) Instrument Station

2. The following staff readings were observed successively with level, the instrument having been moved forward after the second, fourth and eighth readings :

0.875, 1.235, 2.310, 1.385, 2.930, 3.125,
4.125, 0.120, 1.875, 2.030, 3.765

The first reading was taken with the staff held upon a Bench Mark of RL 132.135 m. Enter the reading in level book form and find the reduced level of other points. Apply the usual check. Find the difference in level between the first and the last points.

14

3. What do you mean by two-point problem ? How can it be solved ?

14

4. Write short notes on the following :

2×7=14

- (a) Temporary Adjustment of Theodolite
- (b) Reciprocal Levelling

5. A survey line AB was measured by a chain of 30 m length and was found to be 2340 m. The same line AB when measured by a 20 m chain, the length was recorded as 2350 m. While calibrating, the 30 m chain was found to be 2 cm too short. What was the error in the 20 m chain ? 14
6. The fore bearing of a line of a regular pentagon is 30° . Find the bearing of other lines of the pentagon. 14
7. What are the principles of surveying ? Explain them briefly. $7+7=14$
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