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BET-023

**DIPLOMA IN CIVIL ENGINEERING
[DCLE(G)]**

Term-End Examination

December, 2019

BET-023 : ELEMENTS OF SURVEY

Time : 2 Hours

Maximum Marks : 70

*Note : Question number 1 is compulsory. Attempt
any four more questions from the remaining
questions. All questions carry equal marks.*

1. Choose the correct alternative : $7 \times 2 = 14$

(a) Geodesic surveying is different from plane surveying because of :

(i) coverage of large area

(ii) the curvature of the earth

(iii) undulations of the topography

(iv) the large difference of elevations
between various points

(b) Which of the following is an obstacle to chaining but not to ranging ?

(i) Hillock

(ii) Building

(iii) River

(iv) Cinema hall

(c) If the fore bearing of a line is 45° , then its back bearing will be :

(i) 45°

(ii) 90°

(iii) 180°

(iv) 135°

(d) The following sights are taken on a turning point :

(i) Fore sight and back sight

(ii) Fore sight only

(iii) Back sight only

(iv) Fore sight and intermediate sight only

(e) The process of turning the telescope about the vertical axis in horizontal plane is known as :

(i) transiting

(ii) swinging

(iii) reversing

(iv) plunging

(f) Contour interval is:

(i) the horizontal distance between two consecutive contours

(ii) the horizontal distance between two points on same contour

(iii) the vertical distance between two consecutive contours

(iv) The vertical distance between two points on same contour

(g) The two point problem and three point problem are methods of:

(i) resection

(ii) orientation

(iii) intersection

(iv) resection and orientation

2. (a) Classify surveying based on methods and phases.

(b) Describe different types of maps and their representative scale.

3. (a) Describe the principle, construction and use of an optical square.

(b) Explain the different chain/tape corrections.

4. (a) Define the following : 7 × 1 = 7
- (i) Magnetic Declination
 - (ii) Isogonic Lines
 - (iii) Agonic Lines
 - (iv) Magnetic Dip
 - (v) Traversing
 - (vi) Local Attraction
 - (vii) Damping
- (b) Convert the following reduced bearing to whole circle bearing : 7
- (i) N 70° 30' E
 - (ii) S 40° 20' E
 - (iii) S 55° 30' W
 - (iv) N 40° 30' W
5. (a) Describe the adjustments of dumpy level. 7
- (b) Discuss the principle of reciprocal levelling with the help of a neat sketch. 7
6. (a) Explain the advantages and disadvantages of "Plane Table Surveying". 7

- (b) Describe in detail, how you would accurately orient the plane table at a station using two point problem technique. 7
7. (a) Discuss the measurement of horizontal angle by method of repetition. 7
- (b) Explain the procedure followed for removing the parallax during setting up theodolite at a station. 7
8. Write short notes on the following : $4 \times 3\frac{1}{2} = 14$
- (a) Offsets
- (b) Face left and face right of observations by a theodolite
- (c) Lehman's rule
- (d) Contouring