

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

**Term-End Examination**

**June, 2019**

00652

**BCE-031 : ADVANCED SURVEY**

*Time : 2 hours*

*Maximum Marks : 70*

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**Note :** *Question no. 1 is compulsory. Attempt any four questions from the rest of the questions.*

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1. Choose the correct answer from the given alternatives :

7×2=14

(a) If  $\Delta$  is the angle of deflection of a simple circular curve of radius R, the length of the curve is

(i)  $\frac{\pi R \Delta}{180}$

(ii)  $\frac{\pi R \Delta}{270}$

(iii)  $\frac{\pi R \Delta}{360}$

(iv)  $\frac{\pi R \Delta}{720}$

- (b) Least count of theodolite is
- (i)  $10^{11}$
  - (ii)  $20^{11}$
  - (iii)  $30^{11}$
  - (iv)  $60^{11}$
- (c) Substense bar is used to measure
- (i) Vertical distance
  - (ii) Elevation
  - (iii) Horizontal distance
  - (iv) Difference of elevation
- (d) An anallactic lens is provided to make the additive constant
- (i) 90
  - (ii) 180
  - (iii) 270
  - (iv) Zero
- (e) If  $L$  is the length of a line and  $\theta$  is the reduced bearing, departure of the line will be
- (i)  $L \sin \theta$
  - (ii)  $L \sec \theta$
  - (iii)  $L \sin^2 \theta$
  - (iv)  $L \operatorname{cosec} \theta$

(f) The instrument which can perform all survey operations in single run is known as

- (i) Auto level
- (ii) Total station
- (iii) GPS
- (iv) EDM

(g) True cable method is used for finding

- (i) Length of chain
- (ii) Width of valley
- (iii) Depth of water in narrow rivers
- (iv) Underground details

2. Explain the temporary adjustments of a theodolite. 14

3. (a) Describe various causes of missed measurements in traverse survey. 7

(b) Discuss the constants of a tachometer. How are they determined? 7

4. What is indirect levelling? Describe the merits and demerits of indirect levelling over direct levelling. 14

5. Explain various elements of a simple circular curve. 14

6. Discuss the requirements and advantages of a Transition curve. 14
7. Describe various steps involved in a project survey. 14
8. Write short notes on any *two* of the following :  $2 \times 7 = 14$
- (a) Latitude and Departure
  - (b) Reciprocal Levelling
  - (c) Reverse Curve
  - (d) Automatic Levels
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