Total No. of printed pages = 3

19/3rd Sem/DCE302

2021

SURVEYING – I

Full Mark – 100

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer any *five* questions.

1. (a) What are the instruments used in chain survey ? How is a chain survey executed in the field ? 3+7=10

   (b) What is well conditioned triangle ? Why is it necessary to use well-conditioned triangle ? 4+6=10

2. (a) What is local attraction ? How is it detected and eliminated ? 10

   (b) Define the terms : 5×2=10

   (i) True and magnetic bearing,

   (ii) Local attraction,

   (iii) Back bearings and

   (iv) Magnetic declination.

[Turn over

3. (a) The following bearings were observed with a compass. Calculate the interior angles. 10

Line	Fore bearing
AB	60°30'
BC	122°0'
CD	46°0'
DE	205°30'
EA	300°0'

(b) Discuss the 'Height of Instruments' methods and 'Rise and Fall' methods of computing the levels. Discuss the merits and demerits of each. 5+5=10

4. The following staff readings were observed successively with a level, the instrument having been moved after third, sixth and eight readings :

2.228 ; 1.606 ; 0.988 ; 2.090 ; 2.864 ; 1.262 ;

0.602 ; 1.982 ; 1.044 ; 2.684 meters.

Enter the above readings in a table and calculate the R. L. of points using both 'Height of Instrument' method and 'Rise & Fall' method. The first reading was taken with a staff held on a bench mark of 432.384m. 10+10=20

5. (a) What is Profile leveling ? Explain with a suitable figure its importance in road construction. 10

(b) What do you understand by leveling in survey ? Briefly explain the different methods of leveling in survey. 10

6. (a) With help of suitable figure, describe the characteristics of contour. 10

(b) Describe the various method of contouring with their advantages and disadvantages. 10