1311

Code : 15CE21T

Register Number | | | | | | | | | | |

II Semester Diploma Examination, Oct./Nov.-2019

SURVEYING – I

Time : 3 Hours] **[Max. Marks : 100**

Note : (i) Answer any **six** questions from Section – **I**.

(ii) Answer any **seven** questions from Section – **II**.

SECTION – I

1. List the principle of Survey. **5**

2. Explain Indirect or Reciprocal method of ranging out survey line. **5**

3. What is cross staff survey ? Mention its application. **5**

4. Explain prismatic compass with neat sketch. **5**

5. Differentiate between :

   (i) Fore-bearing and Back-bearing.

   (ii) Closed traverse and Open traverse. **5**

6. Explain Quadrantal bearing system (reduced). **5**

7. Define the following terms : **5**

   (i) Level line

   (ii) Parallax

   (iii) Change point

8. Explain the temporary adjustments on a dumpty level. **5**

9. What is contour ? What are the uses of contour map ? **5**

SECTION – II

1. (a) With neat sketch explain stepping method of chaining on sloping ground. 5

   (b) Mention the instruments used for setting out right angles and explain open cross staff. 5

2. (a) List the obstacles in chaining and give one example for each. 5

   (b) A 20 mt. Chain was 20 cm too short, it was used to measure a line and the result was 200 mt. What was the true length of the line ? 5

3. (a) Compare W.C.B and R.B. Systems. 5

   (b) Convert the following W.C.B. to R.B. 5

   (i) 15° 00′

   (ii) 45° 30′

   (iii) 130° 45′

   (iv) 300° 15′

   (v) 220° 30′

4. Following bearings were observed in running a closed traverse, at what stations do you suspect local attraction ? Determine the corrected bearings : 10

Line	Fore-bearing	Back-bearing
AB	150° 0′	330° 0′
BC	230° 30′	48° 0′
CD	306° 15′	127° 45′
DE	298° 00′	120° 00′
EA	49° 30′	229° 30′

5. (a) Compare Rise and Fall with Collimation method. 5

   (b) List the types of Direct levelling. Explain Simple levelling. 5

(a) List the points to be remembered while reading and entering the staff reading in the level book. 4

(b) Following readings were taken with a dumpy level with 4 mt. Staff on a continuously sloping ground : 6

1.680, 2.470, 3.550, 0.680, 1.200, 2.050, 3.800, 1.200, 1.600, 1.850, 3.600, 1.800, 2.500, 3.500.

Rule out complete page of a level book and find out.

(i) Rise and fall of each point.

(ii) R.L. of each point.

First reading taken on B.M. of R.L. 100.00, apply check.

7. (a) Explain the Temporary adjustments of a dumpy level. 4

(b) In running fly level from a B.M. of RL 360.650, the following reading were obtained :

B.S : 0.695, 1.630, 1.105, 0.850, 0.395

F.S : 0.945, 1.155, 1.985, 1.125

From the last point of Instrument seven pegs at Ten metre interval are to be set out on a uniform gradient of 1 in 40. The first peg is to have a R.L. of 360.00 mt. Workout the staff readings required for setting the top of the pegs on a given gradient and enter the result in a level book. 6

8. Four sight rails are to be erected over points A, B, C & D 50 mt. apart in a straight line. The invert level of sewer at D is 74.500 mt. The sewer is on a gradient of 1 in 200 raising from D to A. The R.L. of pegs on the surface of ground are, 76.300, 75.500, 74.850 and 75.650 respectively from A to D. The height of the sight rail at D is 1.5 m Find the suitable height of boning rod and height of the sight rail above the pegs at A, B & C. 10

9. (a) Mention any five characteristics of Contour.

(b) The areas within the contour line at the site reservoir and face of the proposed dam are as follows : 5

Contour (M)	Area (m^2)
300	2000
310	8500
320	16500
330	25500
340	32000

Calculate the volume of water in the lake between 300 m and 340 mt contours. Use Trapezoidal and Prismoidal rule.

10. A road of constant R.L. 120.00 m runs from North to South. The G.L along the centre of the road are as follows : 10

Chainage	R.L
0	117.50
30	116.25
60	115.95
90	116.65
120	117.20
150	117.85
180	115.70

Assuming no transerverse slope, find the volume of earth work for a road of formation width 8.00 m with side slopes 1.5 : 1 by

(i) Trapezoidal method

(ii) Prismoidal method.