1124

Code : 15CE21T

Register Number | | | | | | | |

II Semester Diploma Examination, April/May-2018

SURVEYING – I

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

Instructions : (i) Answer any **six** full questions from Section – **I**.
(ii) Answer any **seven** full questions from Section – **II**.

SECTION – I

1. Briefly explain the principles of Surveying. **5**

2. List the errors in chain surveying. **5**

3. Compare Prismatic Compass and Surveyor's Compass. **5**

4. Explain the procedure to identity local attraction. **5**

5. Define the terms in levelling **5**
   (i) Datum
   (ii) Elevation
   (iii) Vertical angle
   (iv) MSL
   (v) Bench Mark

6. Define the terms : **5**
   (i) BS
   (ii) IS
   (iii) FS
   (iv) CP
   (v) HI

7. List the errors in levelling. 5

8. Briefly explain the methods to locate Contour points. 5

9. List the uses of Contour Maps. 5

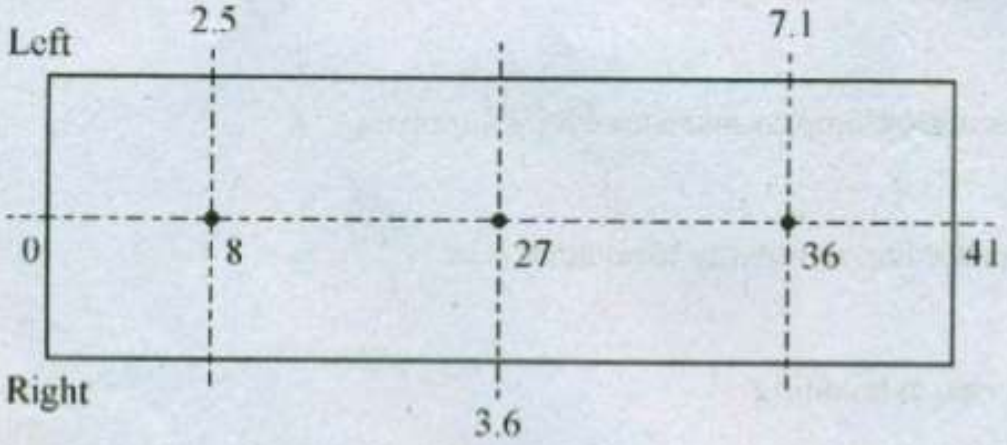
SECTION – II

10. (a) List the tallies used in metric chain. 2

(b) A 20 m chain was found 10 cm too long offer chaining a distance of 1500 m. It was found to be 18 cm too long at the end of day's work after chaining a total distance of 2900 m. Find the true distance if the chain was correct before the commencement of the work. 8

11. (a) With a sketch explain the reciprocal ranging. 4

(b) Plot the following field details of cross staff survey and calculate the total area, All dimensions being taken in metres. 6



12. (a) Define Magnetic Dip and Magnetic declination. 3

(b) Following bearings were observed while traversing with a compass.

Line	FB	BB
AB	45°45'	226°10'
BC	96°55'	227°5'
CD	29°45'	209°10'
DE	324°48'	144°48'

Identify the stations were affected by local attraction, and determine the correct bearings. 7

13. (a) List the possible personal errors in Compass Surveying. 4

(b) Find the magnetic declination at a place if the Magnetic bearing of the sun at noon is (a) 184° (b) 350° 20'. 6

14. (a) Compare the Arithmetic checks in HI Method and Rise and fall method. 3

(b) Following staff readings were observed successively with 9 level, the instrument having been moved after 3rd, 6th and 8th readings.

2.228, 1.606, 0.988, 2.090, 2.864, 1.262, 0.602, 1.982, 1.044, 2.684 metres.

Enter the above readings in a page of a level book and calculate the RL of points, if the readings were taken with a staff held on a bench mark of 430-000 m. 7

15. (a) Explain parallax and its elimination. 5

(b) Briefly explain the profile levelling. 5

16. Following consecutive readings were taken with a level and 5 m levelling staff on a Continuously sloping Ground at a common interval of 20 metres; 0.385, 1.030, 1.925, 2.825, 3.730, 4.685, 0.625, 2.005, 3.110, 4.485. The reduced level of firm point was 208.125 m. Rule out a page of a level field book and enter the above readings. Calculate the reduced levels of points by rise and fall method also the gradient of the line joining the 1st point and last point. 10

17. (a) List the chief methods of contour interpolation. 3

(b) List the characteristics of contours. 7

18. (a) Explain the procedure followed for having horizontal control in Direct Method of Contouring. 5

(b) Explain the radial contouring with a neat sketch. 5

19. A road with a varying RL runs from North to South. The ground is level from East to West.

Chainage in m :	0	30	60	90	120	150	180
Level in m :	202.5	202.4	202.1	202	201.5	201.2	201

RL of road at 0 metre chainage is 205 m.

RL of road at 180 m chainage is 203.5 m.

The road is fall in gradient from 0 m to 180 m chainage.

Compute the volume of Earth work by

(i) Trapezoidal method

(ii) Prismoidalmethod

Adopt width of road formation as 8 m and side slope 1.5 : 1. **10**