**1052**

**Code : 15CE33T**

*Register Number* | | | | | | | |

**III Semester Diploma Examination, Nov./Dec. 2017**

# SURVEYING – II

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

*Note :* (i) Answer any **six** questions each carries **5** marks from Part – A.
(ii) Answer any **seven** questions each carries **10** marks from Part – B.

## PART – A

1. Define the following : **5 × 1 = 5**
   (i) Transiting
   (ii) Line of sight
   (iii) Face left observation
   (iv) Telescope Normal
   (v) Centering

2. Explain the closing error in closed traverse. **5**

3. Describe the method of finding the elevation of an object when its base is accessible. **5**

4. Explain the procedure of determining Tacheometric constants by fixed hair method. **5**

5. Describe the procedure of setting out simple curve by offsets from chord produced method. **5**

6. List the elements of a reverse curve with a neat sketch. **5**

7. State the advantages of Total Station. **5**

8. Explain the procedure of measurement of horizontal angle by Total Station. **5**

9. Describe linking softwares used in Total Station to transfer data file. **5**



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## PART – B

10. Calculate the area of the traverse by Independent Co-ordinate Method from the following data of a closed traverse PQRSP : **10**

| Line | Latitude (m) | Departure (m) |
|---|---|---|
| PQ | –300 | +450 |
| QR | +640 | +110 |
| RS | +100 | –380 |
| SP | –440 | –180 |

11. Organise the traverse by Transit rule if the following data of traverse are not balanced : **10**

| Line | Length (m) | Latitude | Departure |
|---|---|---|---|
| PQ | 470 | +436.90 | –173.30 |
| QR | 635 | +84.70 | +629.40 |
| RS | 430 | –419.30 | +95.50 |
| SP | 560 | –100.50 | –552.90 |

12. Calculate the omitted measurements of a closed traverse PQRST with the following field observations : **10**

| Line | Length (m) | Bearings |
|---|---|---|
| PQ | 730 | ? |
| QR | ? | N 62° 18' E |
| RS | 1246 | N 37° 42' W |
| ST | 940 | S 55° 24' W |
| TP | 575 | S 2° 42' W |

13. Calculate the RL of the top of a transmission tower from the following observations : **10**

| Instrument station | Vertical angle to top of tower | Staff reading on BM (m) |
|---|---|---|
| P | 18° 30' | 2.815 |
| Q | 12° 40' | 1.865 |

The distance between the station P and Q is 70 m and RL of BM is 325.550 m. The stations P, Q and the tower are in the same vertical plane.

14. Calculate the RL of Q and the horizontal distance from P to BM and Q with the help from following readings were taken by a tacheometer. The constants of the tacheometer are 100 and 0. The staff was kept vertical and RL of BM is 85.50 m. **10**

| Station | Staff Station | Vertical angle | Hair readings |
|---|---|---|---|
| P | BM | –6°.00' | 1.100, 1.580, 2.060 |
| | Q | –8°.00' | 0.980, 1.230, 1.480 |

15. Calculate the degree of curve, mid-ordinate and Apex distance of a curve if the radius of curve = 300 m, length of chord = 30 m and deflection angle = 60°. **10**

16. Calculate all the necessary data for setting a curve of radius 300 m by offsets from chords produced. Two tangents intersect at chainage 2190 m and the intersection angle being 144°. Assume peg interval as 20 m. **10**

17. Calculate all the necessary data for setting out of right handed curve by Rankine's method of deflection angles when two straights intersect at chainage 2265 m with 40° deflection angle. The radius of the curve is 300 m and peg interval may be assumed as 20 m. The least count of the theodolite as 20". **10**

18. (a) What are the applications of Remote sensing ? **5**

    (b) Explain briefly about GPS receivers. **5**

19. Identify the difference between GIS and CAD. **10**