

**021****Code : 15CE33T****Register  
Number**

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**III Semester Diploma Examination, Oct./Nov.-2019****SURVEYING - II****Time : 3 Hours ]****[ Max. Marks : 100**

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

**PART – A**

1. List the fundamental lines of a theodolite. **5**
2. Differentiate between consecutive co-ordinates and independent co-ordinates. **5**
3. Explain the principle of closed traverse. **5**
4. Explain the procedure to find the RL of an elevated object whose base is accessible by single plane method. **5**
5. What are the advantages and disadvantages of Tacheometry ? **5**
6. Draw a neat sketch of circular curve and show its elements. **5**
7. What are the requirements of an ideal transition curve ? **5**
8. Explain the working principle of GPS. **5**
9. List the advantages of total station. **5**

**PART – B**

10. Explain the method of repetition and reiteration for measuring the horizontal angle. **10**
11. Calculate the error of closure and adjust the following traverse by using transit rules (units in m). **10**

Line	Latitude	Departure
PQ	123.35	35.68
QR	93.82	205.86
RS	-177.44	70.11
SP	-39.21	-312.25



12. Compute the area of the traverse whose details are as under :

Line	Length in 'm'	Bearing
AB	204	87° 30'
BC	226	20° 20'
CD	187	280° 00'
DE	192	210° 30'
EA	87.85	180° 28'

13. A Theodolite was set up in between two towers X & Y. The distance of the theodolite station from X is 60 m and from Y is 120 m. Observations were taken from theodolite to the top of towers X and Y and were recorded as 33° 26' 20" and 30° 50' 40" respectively, telescope focused upwards for both the cases. The RL of the trunion axis was 139.675 m above the M.S.L. Calculate the RL of the top of the tower X and that of Y.

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14. A tachometer is fitted with an anallactic lense and is having a multiplying constant 100. The following readings are taken with staff held vertically :

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Inst. Station	Staff Station	Height of axis	Vertical angle	Staff readings
A	B.M.	1.80	-5° 30'	3.00, 5.75, 8.50
A	B	1.80	+3° 24'	3.10, 5.5, 8.05
B	C	1.60	+6° 12'	2.90, 6.45, 9.95

R.L. of B.M. = 685.000

Calculate the distance between A, B and C. Also calculate the elevation of these stations.

15. Explain the procedure for setting out curve by two theodolite method.

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16. Two straights intersects at a chainage (80 + 17). The deflection angle is 11°. Calculate all the data necessary for setting out a 3° simple curve by the method of offsets from chords produced.

Peg interval = 30 m

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17. Two straights BA and AC are intersected by a line EF. The angle BEF and EFC are 130° and 140° respectively. The radius of the first arc is 500 m and that second arc is 300 m. Find the chainages of the tangent points of compound curvature given that the chainage of the intersection point A is 3200 m.

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18. What is meant by GIS ? List their objectives and applications.

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19. Briefly write the field procedure for co-ordinate measurement using total station.

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