F 3109 (Pages : 3) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2014

Third Semester

Branch : Civil Engineering

SURVEYING—I (C)

(Prior to 2010 admissions—Old Scheme)

[Supplementary/Mercy Chance]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*
Each question carries 4 *marks.*

1. Explain with the help of sketches the relation between the whole circle bearing and quadrantal learning.
2. Briefly explain the method of traversing with the plane table.
3. Enlist and define different kinds of bench mark.
4. Enlist the characteristics of contour.
5. Explain briefly the procedure for the reiteration method of measuring horizontal angles.
6. Write a note on subtense bar.
7. Derive Simpson's rule for computing area.
8. Explain briefly Mass–haul diagram.
9. Explain the term degree of a curve.
10. Explain the requirements of a transition curve.

(10 × 4 = 40 marks)

Part B

Answer **all** *questions.*
Each question carries 12 *marks.*

11. Explain one method each to continue and measure the distance between points on either side of the obstacle in the case of (a) a pond ; (b) a river ; and (c) a building.

Or

Turn over

12. The whole circle bearings of the lines of a closed traverse are given below. Determine which stations, if any are affected by local attraction and correct the bearings by calculating the included angles :

	F.B.	B.B.
PQ ...	41°20'	221°20'
QR ...	114°30'	293°30'
RS ...	164°40'	346°20'
SP ...	275°30'	94°30'

13. The following readings were taken with a level in sequence : 2.315, 1.615. 1.805, 1.115, – 2.345, 1.345, 2.105, 1.305 and 1.025. The level was shifted after the third and sixth readings. The fifth reading was to a station whose elevation is assumed to be 0.00. Find the reduced levels of the remaining points.

Or

14. The following readings refers to a reciprocal levelling observations between two points A and B 100 m apart. The reduced level of A is 193.835 m. Find the reduced level of B and the collimation error, if any, of the instrument :

Instrument near	Staff at A	Staff at B
A ..	1.279	2.918
B ..	1.110	2.739

15. Explain the permanent adjustments of a theodolite.

Or

16. A tachometer was kept at A and the stadia rod was held at B. The vertical angles measured to the 1 m and 4 m marks on the rod were 3°45' and 5°30' respectively. If the RL 07 the instrument axis is 1050 m, find the distance AB and the RL of station B.

17. Explain the construction and working principle of a planimeter.

Or

18. Find the area of the following traverse by (a) co-ordinated ; (b) double meridian distances :

Line	:	AB	BC	CD	DA
Length (m)	:	310.5	340.8	405.2	279.3
Bearing	:	225°	50°30'	305°45'	213°12'

19. What are the obstacles to curve ranging ? Explain the solution to any one of them.

Or

20. The maximum permissible speed on a roadway is 120 kmph. The rate of change of radial acceleration is 0.3 m/s^3. The centrifugal ratio is 1/4. If the deflection angle is 75°, find the minimum radius of transition curves its length, shift and tangent length.

(5 × 12 = 60 marks)