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**Question Paper Code : 21199**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Third Semester

Civil Engineering

CE 2204/CE 37/10111 CE 307 — SURVEYING — I

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Explain the use of reciprocal ranging.
2. What do you mean by plane surveying?
3. What do you mean by fly and check levelling?
4. Explain merits of plane table surveying?
5. Explain the use of Traversing.
6. Explain the use of Dumpy and Tilting levels.
7. Explain about transition curves.
8. What do you mean by Horizontal and vertical curves?
9. What do you mean by temporary adjustment of theodolite?
10. Write about well conditioned triangles.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Compare two point and three point problem in plane tabling. (6)  
(ii) Explain the use of plane tabling in detailed surveying. (10)

Or

- (b) (i) Explain about surveyor's compass. (4)  
(ii) The following bearings were observed with a compass

AB 74°0' BA 254°0'

BC 91°0' CB 271°0'

CD 166°0' DC 343°0'

DE 177°0' ED 0°0'

EA 189°0' AE 9°0'

Where do you suspect the local attraction? Find the correct bearings. (12)

12. (a) (i) Explain the field and office work in chain surveying? (8)  
(ii) Explain how you will conduct chain survey to measure a land parcel in agriculture field. (8)

Or

- (b) Explain the traversing and plotting procedures of chain survey. (16)  
13. (a) (i) Explain angle measuring procedures using theodolite. (8)  
(ii) Explain the permanent adjustment of a theodolite. (8)

Or

- (b) (i) Explain Bowdich rule with example. (4)  
(ii) A closed traverse was conducted round an obstacle and the following observations were made. Workout the missing quantities. (12)

Side	Length in m	Azimuth
AB	-	33°45'
BC	300	86°23'
CD	-	169°23'
DE	450	243°54'
EA	268	317°30'

14. (a) The following staff readings were observed successively with a level, the instrument having been moved after third, sixth and eighth readings.

2.228 1.606 0.988 2.090 2.864 1.262

0.602 1.982 1.044 2.684 meters

Enter the above readings in a page of a level book and calculate R.L of points if the first reading was taken with a staff held on a bench mark of 432.384m.

Or

- (b) (i) Explain the LS and CS method. (8)  
(ii) Compare the rise and fall and line of collimation methods in reducing levelling observation. (8)
15. (a) (i) Explain the concepts of route survey for highways, railways and water ways. (8)  
(ii) Explain with neat sketches to set out tangential curves by theodolite. (8)

Or

- (b) (i) Explain the instruments and procedures used in tunnel surveying. (8)  
(ii) Explain some mine survey instruments. (8)