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Question Paper Code : 91291

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Third Semester

Civil Engineering

CE 6304 – SURVEYING – I

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A

(10×2=20 Marks)

1. What is the a conditioned triangle ?
2. List out the types of obstacles in chaining.
3. Define and distinguish the term true bearing and magnetic bearing.
4. State any two advantages of plane table surveying.
5. What is fly levelling ?
6. What is reduction in levelling ? Name the methods.
7. State any two characteristics of contour.
8. What is mass diagram ? Why it is prepared ?
9. What are the uses of tacheometry ?
10. What is elimination of parallax ? How it is performed ?

PART – B

(5×13=65 Marks)

11. a) i) What are the basic principle of surveying ? Explain them. (8)
- ii) What is a well conditioned triangle ? Explain its significance in surveying. (5)

(OR)

- b) Explain the methods of chaining with neat sketches. When confronting you do obstacles for chaining and not for ranging ? (13)



12. a) The following bearings were observed in running a closed traverse.

Line	F.B	B.B
AB	80° 15'	259° 30'
BC	120° 30'	301° 45'
CD	170° 45'	350° 45'
DE	230° 00'	49° 15'
EA	310° 00'	130° 15'

Mention which stations were affected by local attraction and determine the corrected bearing. (13)

(OR)

- b) i) State the advantages and disadvantages of plane table surveying. (8)
- ii) Write the differences between surveyor's compass and prismatic compass? (5)
13. a) The following staff readings were observed successively with a level. The instrument having been moved after the second, fifth and eight readings 0.675, 1.230, 0.750, 2.565, 2.225, 1.935, 1.835, 3.220, 3.115 and 2.875 m. The first staff reading was taken with a staff held on a bench mark of reduced level 100.000 m. Enter the reading in the level book from and find reduced level of all points by any one methods. (13)

(OR)

- b) The following consecutive reading were taken with a dumpy level and 5 m levelling staff on continuously sloping ground at a common interval of 20 m. The RL of first point 525.050 m. Rule out of a page of level field book and enter reading. Calculate RL by height of collimation method and find the gradient between first and last point. 0.410, 1.025, 2.085, 2.925, 3.620, 4.595, 0.715, 2.115, 3.090 and 4.400 m. (13)
14. a) Explain how will you determine the capacity of a reservoir using a contour map. (13)
- (OR)
- b) A reservoir of bottom size 35 m × 25 m is planned with a depth of 4 m. The side slope is 1.5 : 1. Calculate the quantity of earth to be excavated. Assume the surface of the ground to be level before excavation. (13)

15. a) The elevation of a point P is to be determined by observations from two adjacent of a tacheometric survey. The staff was held vertically upon the point and the instrument is fitted with an anallactic lens and the constant is 100. Compute the elevation of the point P from the following data, taking both the observations as equally trustworthy.

Ins. Station	Height of Axis	Staff Station	Vertical Angle	Elevation of Station	Staff Reading
A	1.42	P	+2°36'	77.750 m	1.230, 2.055, 2.880
B	1.40	P	-3°36'	97.135 m	0.785, 1.800, 2.815

Also, calculate the distance of A and B from P. (13)

(OR)

- b) To determine the multiplying constant of a tacheometer, the following observations were taken on a staff held vertically at distance, measured from the instrument.

Observation	Horizontal distance in m	Vertical angle	Staff reading
1	50	+3°48'	0.500
2	100	+1°06'	1.000
3	150	+0°36'	1.500

The focal length of the glass is 20 cm and the distance from the object glass to trunnion axis is 10 cm. The staff is held vertically at all these points. Find the multiplying constant. (13)

PART - C

(1×15=15 Marks)

16. a) Describe with the help of sketches the characteristics of contour. (15)
- (OR)
- b) Explain in detail about the traversing method adopted for a river and a lake with suitable sketch. (15)