

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note: Attempt five questions in all selecting, atleast one question from each Unit. Unit V is compulsory.

UNIT-I

- I. a) Discuss the factors that are considered in deciding the stations of a chain survey.
b) Explain various methods for determining the width of a river. (2×5 = 10)
- II. The following angles were observed in clockwise direction in an open traverse:
ABC = 124° 15'; BCD = 156° 30'; CDE = 102° 0'; DEF = 95° 15'; EFG = 215° 45'. Magnetic bearing of the line AB was 241° 30'. Determine the bearing of line FG. (10)

UNIT-II

- III. a) Explain the (i) radiation and (ii) intersection methods of plane table surveying.
b) Discuss two point problem. Explain the procedure to solve it. (2×5 = 10)
- IV. The following consecutive reading were taken with a level and 5 m levelling staff on continuously sloping ground at a common interval of 20 m. The staff readings taken are: 0.385, 1.030, 1.925, 2.825, 3.730, 4.685, 0.625, 2.005, 3.110 and 4.485. The R.L. of first point was 208.125 m. Calculate the RL of above points by rise and fall method and calculate the gradient of line joining the first and last RL. (10)

UNIT-III

- V. a) Explain the method of reiteration to measure the horizontal angles with the help of theodolite.
b) Discuss briefly the balancing of traverse by Bow-Ditch's transit and modified transit rules. (2×5 = 10)
- VI. a) Explain the vertical control for setting out works. Also discuss the setting out of foundation plan for load bearing and framed structure.
b) Briefly discuss the procedure of checking verticality of high rise structures. (2×5=10)

UNIT-IV

- VII. a) What is meant by zero circle? Describe various methods of determining its area.
b) Describe the polar planimeter and explain its principle. How it helps in measuring the area of figure? (2×5 = 10)
- VIII. a) Discuss briefly the various elements of a curve. Explain the method of long chords to set out a simple curve.
b) Elaborate different types of transition curve. Discuss the component parts with the help of a neat sketch. (2×5=10)

UNIT-V

- IX. a) Explain reconnaissance.
b) Elaborate different types of chains.
c) List various chain corrections to be applied.
d) List various types of errors in plane table survey.
e) Define contour and list the advantages to plot contour.
f) Discuss the principle of transit theodolite.
g) Explain face left and face right readings.
h) Define Simpson's 1/3 rule.
i) List various methods of setting out curves.
j) Discuss the principle of planimeter. (10×2=20)