

9. State under what circumstances it becomes necessary to take cross sections and give a convenient form for the field book.

10. The ground at station A has an even incline of 1 in 10 in cross section, the depth of cutting at the centre stake is 6 feet, the width at formation level 18 feet and the slopes $1\frac{1}{2}$ to 1. Required the distance of the side stakes from the centre.

11. The angle included between two tangents is $120^{\circ} 37'$ and the radius of the curve 5000 feet. Find the distance of the intersection of the tangents from the point of curve.

12. Required the number of chords (100 feet each) in the above curve and also the deflection angle for each chord.