Surveying :

UNIT- IV:

1. Briefly explain ‘reverse curves’ and ‘shift of a transition curve’

2. State the relationship between the radius of a curve and the degree of the curve.

3. What are transition curves?

4. Calculate the salient elements of the simple circular curve. Considering the chainage of point P to be 1000 m.

5. Two tangents intersect at chainage 2380 m, the deflection angle being 50° 30'. Compute the necessary data for setting out a 5.7° curve to connect the two tangents if it is intended to set out the curve by Rankine's Method of tangential angles. Take the length of the normal chord as 30 m. Also, tabulate the values of the deflection angles for setting out with a theodolite having least count of 20".

6. Two straights AB and BC meet at an inaccessible point B. They are to be connected by a simple circular curve of 500 m radius. Two points P and Q are selected on AB and BC respectively, and the following data are obtained: RAPQ = 157° 22' ; RCQP = 164° 38' ; PQ = 200 m.

7. Calculate the necessary data for setting out the curve by the method of deflection angle. The nominal length of chord is 30 m. assume any data missing.

8. A transition curve of length 230 m joins a straight to a circular curve of radius 800 m. What is the angle turned by the transition curve and what is the necessary shift?. Find the length of offset to the transition at a distance 150 m from the short along the tangent.

9. Two straights AB and BC intersect at chainage 1000 m, the deflection angle being 40°. It is proposed to insert a right-handed circular curve 400 m radius with a cubic parabola of 90 m length at each end. The circular curve is to be set out with pegs at 20 m intervals and the transition curves at 10 m intervals. Find the

10. Chainage at the begining and end of the combined curve.