

[01 - 2204]

II/IV B.E. DEGREE EXAMINATION.

Second Semester

Civil Engineering

SURVEYING — II

(Common with Civil Environmental Engineering and
Dual Degree in Civil Engineering)

(Effective from the admitted batch of 1999–2000)

Time : Three hours

Maximum : 70 marks

First question is compulsory.

Answer any FOUR questions out of remaining.

Answer to Question No. 1 are to be written
in the same sequence at one place only.

All questions carry equal marks.

1. (a) What is meant by face left and face right observations? Why is it necessary to take observations on both faces?
- (b) What is Beaman Stadia arc? Mention its use.

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7. (a) Explain the procedure of setting out a curve by Rankines method. Give the computations carried out in this procedure.
- (b) Two tangents intersect at chainage 1180 m with their deflection angle being 36° . Adopting the method of deflection angles, calculate the necessary data to set out a simple curve of 30 m radius.
8. Write short notes on.
- (a) Base line measurements
- (b) Elements of Reverse curve
- (c) Errors in theodolite.
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- (c) Distinguish between repetition and reiteration
 - (d) Explain the principle of Tacheometry.
 - (e) What do you understand by term an ideal curve?
 - (f) State the formula to find the length of transition curve.
 - (g) What is axis signal correction?
2. Explain the step by step procedure for measuring the horizontal angles by the method of repetition. Mention the advantages and disadvantages.
3. A and B are two stations of a location traverse, their coordinates in m are as follows:

	Total Latitude	Total Longitude
A	34,321	7,509
B	33,670	9,652

A straight reach of railway is to run from B, roughly South of A to B invisible from C and roughly North of B, the offsets perpendicular to the railway being $AC = 130$ m and $BD = 72$ m. Calculate the bearing of CD.

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4. (a) What is Tangential method of Tacheometry? Explain the different cases in Tangential method of Tacheometry.
- (b) Two distances of 20 m and 10 m were accurately measured and the intercepts on the staff between the outer Stadia webs were 0.196 m at the former distance and 0.996 m at the later. Calculate the tacheometric constants.
5. (a) Derive the fundamental equation of a Stadia tacheometry.
- (b) In a subtense bar observation, the horizontal angles measured from two stations A and B are $3^{\circ} 10'$ and $1^{\circ} 20'$ respectively. Compute the distance between A and B if the length of subtense bar is 2 m.
6. (a) What are the different types of horizontal circular curves? How would you select the most suitable type for a particular case?
- (b) Two length intersect at a point C of chainage 3506 m. The angle of deflection to the right is 40° . Two straights are to be connected by a composite curve consisting of a circular curve of radius 320 m and two transition curves of length 50 m each on either side. Calculate the various elements and deflection angles for setting out the transition curve. The peg interval on the circular curve is 20 m.