

SE Civil IV EBGJ

Surveying-II

(3 Hours)

01.12.16  
Q.P. Code : 539000

[ Total Marks : 80

- N.B.:** (1) Question No.1 is compulsory.  
(2) Solve any Three questions out of the remaining questions.  
(3) Figures to the right indicate full marks.  
(4) Assume suitable data wherever necessary and state the same.

1. Write short notes on (Any Four):

- (a) Block contouring project in survey camp  
(b) Methods of tacheometry  
(c) Route surveying  
(d) Remote sensing  
(e) Designations of curves  
(f) Electronic Digital Theodolite

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2. (a) Describe the radial contouring project in detail?

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(b) In tacheometry, the following observations were observed with a tacheometer, fitted with anallatic lens and multiplying constant as 100. If the RL of BM is 555.700m, Calculate the RLs of A, B and C?

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Inst. sth	ht (m)	staff stn	vertical angle	staff readings (m)	remark
A	1.40	BM	$-1^{\circ}35'$	3.540, 2.330, 1.120	LOS
A	1.40	B	$+2^{\circ}54'$	3.550, 2.380, 1.210	Inclined. staff
B	1.38	C	$+3^{\circ}12'$	3.985, 2.425, 0.865	vertical

3. (a) Describe the salient features of a total station and explain the various applications of total station?

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(b) How will you set out a culvert in the field and explain the same with a neat sketch.

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TURN OVER

4. (a) Explain the followings with neat sketches : 8
- (i) Compound curve
  - (ii) Composite curve
  - (iii) Reverse curve
  - (iv) vertical curve
- (b) Two tangents intersect at chainage (79+10) and the deflection angle is  $50^{\circ}30'$ . 12  
Compute the necessary data for setting out of simple circular right hand curve of 300 m radius by Rankine's method. Take the length of normal chord as 30m. Prepare setting out table and show necessary checks.
5. (a) Explain the methods of setting out of simple circular curve? 10
- (b) Write an exhaustive note on difficulties in setting out simple curves? 10
6. (a) In a tacheometric surveying, the stadia readings with horizontal sight on a vertical staff held 50m away from a tachometer were 1.284 and 1.780m. The focal length of the object glass was 250mm. The distance between the object glass and trunnion axis was 150mm, calculate stadia interval? 8
- (b) Explain tangent correction and chord gradient methods of setting out vertical curves? 12