

SE/CE /SEM-IV CBSGS/SURVEYING-II

19/5/16

Q.P. Code : 539002

( 3 Hours )

[ 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**) : 20
- (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
2. (a) Describe the radial contouring project in detail? 10  
 (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? 10

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

3. (a) The stadia readings with a horizontal sight on a vertical staff held 50m away from a tacheometer are 1.284 and 1.780m. The total length of object glass is 250mm. The distance between object glass and trunnion axis is 150mm, calculate stadia interval? 10
- (b) Explain the steps involved in determining 'L' section and 'C' section of a road? State the practical utilities of these for a civil engineer? 10

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4. (a) Explain the followings with neat sketches : 12
- (i) Compound curve
  - (ii) Composite curve
  - (iii) Reverse curve
  - (iv) Vertical curve
- (b) What are the essential requirements of a transition curve? Derive an expression for an ideal transition curve? 8
5. (a) 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 P.I. = 30m. Prepare setting out table and show necessary checks.
- (b) Discuss the methods of setting out simple circular curve with sketches. 8
6. Explain the following (**Any Four**) : 20
- (a) GPS
  - (b) EDM
  - (c) Use of computers in surveying
  - (d) Total station
  - (e) Project survey for a dam
  - (f) Setting out of culvert
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