3684

Surveying - I
(113105)

P. Pages : 2

Time : Three Hours   **Max. Marks : 80**

Instructions to Candidates :
1. Do not write anything on question paper except Seat No.
2. Answer sheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Attempt **any two** questions from each unit.
5. Non programmable calculator is allowed.
6. Assume suitable data wherever necessary.

UNIT - I

1. a) When is reciprocal levelling is done ? Describe the method along with sketch.   **8**

b) Explain :   **8**

   i) Height of instrument method.

   ii) Rise of fall method.

c) Explain in details, plotting L - section and cross section.   **8**

UNIT - II

2. a) State the uses of theodolite and explain any one in detail.   **8**

b) Enlist various fundamental lines of transit theodolite and explain the relation between them.   **8**

c) The following are the lengths and bearing of the sides of traverse ABCD. The bearing are referred to the magnetic meridian, the value of the magnetic declination being 5^0 30' W. Convert the observed bearings to the true bearing and find error of closure.   **8**

Line	Length in m	Bearing
AB	470.00	343^0 52'
BC	635.00	87^0 50'
CD	430.00	172^0 40'
DA	563.00	265^0 12'

UNIT - III

3. a) Describe fully with sketches, the characteristics of contours and explain the uses of contour maps. **8**

   b) To determine the elevation of first station A of a tachometric survey the following observations were made the staff being held vertically. The instrument was fitted with an analytic lens & value of constants was 100. RL of BM = 158.205. **8**

Instruction	HI	Staff Station	Vertical Angle	Staff Readings
O	1.440	B.M	$-5°40'$	1.332, 1.896, 2.460
O	1.440	C.P	$+8°20'$	0.780, 1.263, 1.746
A	1.380	CP	$-6°24'$	1.158, 1.617, 2.076

   c) State principle of stadia method. **8**

UNIT - IV

4. a) What is meant by transition curve ? What are the types and uses of transition curve ? **8**

   b) What is mean by compound curve ? Explain setting out of a compound curve. **8**

   c) Explain element of simple circular curve and describe the procedure for setting out the curve by offsets from long chord. **8**

UNIT - V

5. a) Enlist all accessories and temporary adjustment in plane table surveying. **8**

   b) Write short notes on. **8**

   i) Box sextant.

   ii) Digital planimeter.

   c) What is two point problem & three point problem ? Explain solution of two point problem. **8**

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