

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-III • EXAMINATION – WINTER • 2014

Subject Code: 130601**Date: 20-12-2014****Subject Name: Surveying****Time: 02.30 pm - 05.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is “Plane Table Survey”? Enlist the instruments used in it and specify main function of each instrument. **07**
- (b) List out the methods of plane table survey and describe any one of them with neat sketch. **07**

- Q.2** (a) Explain how the temporary adjustment of a vernier transit theodolite is carried out? **07**
- (b) Explain repetition method of measurement of horizontal angles by theodolite. **07**

OR

- (b) Enlist instruments used in theodolite traverse survey mentioning function of each instrument. **07**

- Q.3** (a) Derive an expression for the distance and height for the trigonometrical levelling case of ‘object inaccessible and instruments axes at different levels’. **07**
- (b) Describe the procedure of setting out of simple circular curve by Perpendicular offset from tangent. **07**

OR

- Q.3** (a) Derive equations for “h”, “D” and “R.L. of Q” from the site situation as shown below. **07**

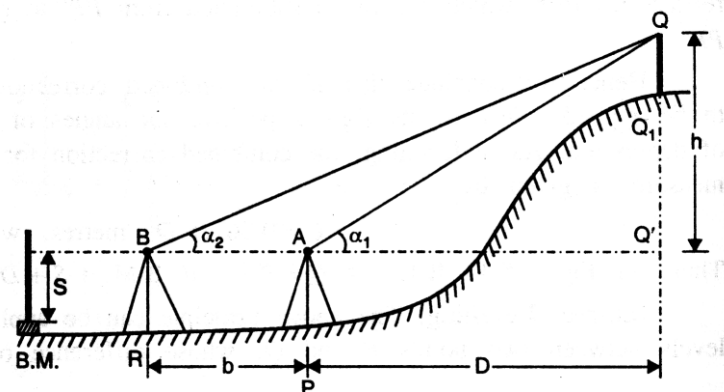


Figure:1 Que-3(a)

- (b) Certain data for setting out a combined curve are as under. **07**
 $\Delta = 34^\circ 30'$, radius of circular curve = 400m, length of transition curve = 60 m.
 Calculate shift of curve, tangent length and spiral angle.

- Q.4** (a) The following are the values of offsets taken from a chain line to an irregular boundary. Calculate the area included between chain line and irregular boundary by Simpson's rule. **07**

Distance (m)	0	50	100	150	200	250	300	350	400
Offset (m)	10.6	15.4	20.2	18.7	16.4	20.8	22.4	19.3	17.6

- (b) What is sounding? State different methods of locating sounding and explain any one method. **07**

OR

- Q.4 (a)** Explain briefly and compare trapezoidal formula and Prismoidal formula for measurement of volume of earthwork or embankment. **07**

- (b) Write a detailed note on “Shore Line Survey” **07**

- Q.5 (a)** Explain procedure for setting out building by centre-line-rectangle. **07**

- (b) Write a short note on reverse curve. **07**

OR

- Q.5** Prepare Gale’s traverse table to adjust the closing error of the closed traverse ABCDA for the following data: **14**

Line	Length (m)	Corrected WCB
AB	110	110°
BC	80	170°
CD	95	250°
DA	160	350°
