

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**PDDC - SEMESTER-II • EXAMINATION – WINTER 2013**

**Subject Code: X20601**

**Date: 20-12-2013**

**Subject Name: Advance 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 tacheometry? Write its uses. **07**
- (b)** Describe the method of determining the constants of a tacheometer from field measurements. **07**

- |            |     |   |           |
|------------|-----|---|-----------|
| <b>Q.2</b> | (a) | Explain the various sources of errors in tacheometry.   | <b>07</b> |
|            | (b) | A tacheometer having constants 100 and 0.15 is set at X. The RL of Bench Mark is 350 meter. Followings are the readings obtained on a staff vertically held. Determine the distance between XY and RL of Y. | <b>07</b> |

Instrument station	staff point	Vertical angle	Staff Readings in meter.		
			Bottom	Center	Top
X	B.M.	$-6^0$	1.300	2.000	2.690
	Y	$+8^0$	0.900	1.700	2.500

**OR**

- |            |     |  |           |
|------------|-----|--|-----------|
|            | (b) | Explain the various types of curve with neat sketch.           | <b>07</b> |
| <b>Q.3</b> | (a) | Explain the elements of circular curve with neat sketch.       | <b>07</b> |
|            | (b) | Describe briefly the location of sounding stations by means of | <b>07</b> |
|            |     | (a) Cross rope soundings and (b) Intersecting ranges.          |           |

**OR**

- Q.3** (a) Explain the principle and objectives of photogrammetry. **07**  
 (b) Define: - Flight line, Azimuth, Swing, Tilted photographs, Exposure station, Principal line, Relief displacement. **07**

- Q.4** (a) What are the advantages of EDM instruments? **07**  
(b) Discuss electromagnetic spectrum with neat sketch. **07**

**OR**

- Q.4 (a)** Explain the following terms: **07**
- |               |                         |
|---------------|-------------------------|
| (i) Departure | (ii) Shortest Distance  |
| (iii) Zenith  | (iv) Spherical triangle |

- Q.4 (b)** Enlist the methods of determining Azimuth. Explain any one method. **07**

- Q.5** (a) Explain components of Remote Sensing. **07**  
(b) What is GPS? How it is useful in ground truth verification? **07**

**OR**

- Q.5** (a) Define Geographical Information System. Explain the objectives of GIS. **07**  
(b) Explain types of data in GIS software. **07**

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