Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC- SEMESTER–II - EXAMINATION – SUMMER 2017

Subject Code: X20601 **Date:30/05/2017**

Subject Name: ADVANCED SURVEYING

Time: 10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

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

Q.1 **(a)** Describe various systems of tacheometric survey. Differentiate between Fixed hair method and movable hair method **07**

(b) Derive the distance and elevation formulae for inclined sight with staff held vertical **07**

Q.2 **(a)** Determine the gradient from a point A to B from the following observations made with a tacheometer fitted with an analectic lens. The constant of the instrument was 100 and the staff was held vertically: **07**

Inst. Stn.	Staff point	Bearing	Vertical angle	Staff readings
P	A	134	9° 40’	0.755 1.040 1. 325
	B	224	6°	1.235 1.490 1.750

(b) Explain with sketch principle of substance method **07**

Q.3 **(a)** Describe elements of simple curve. **07**

(b) Explain the setting out of simple curve by offsets from long chord. **07**

Q.4 **(a)** Explain relief displacement. Derive relief displacement equation on vertical photograph. **07**

(b) Two points A and B having elevations of 500 m and 300 m respectively above datum appear on the vertical photograph having focal length of 20 cm and flying altitude of 2300 m above datum. Their corrected coordinates are as follows. Determine the length of ground line AB. **07**

Point	Photographic X co-or. (cm)	Photographic Y co-or. (cm)
a	+ 2.51	+ 1.31
b	-1.72	+3.55

Q.5 **(a)** Explain about uses and functions of total station. **07**

(b) Explain sidereal time and standard time in brief. **07**

Q.6 **(a)** Explain following methods of locating soundings: (1) By cross rope, (2) By range and one angle from the boat **07**

(b) Explain mechanical method of the three point problem for plotting of soundings **07**

Q.7 **(a)** Explain segments and satellite constellation of Global positioning system. **07**

(b) Define GIS. Write names of popular GIS softwares/programs. Explain components of GIS. **07**

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