Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC SEM-II Examination May 2012

Subject code: X20601

Subject Name: Advanced Surveying

Date: 23/05/2012 **Time: 10.30 am – 01.00 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 are the different systems of tacheometric measurements? Derive the formula by tangential method when both the angles are angles of elevation. **07**

(b) Explain the principle of stadia method. **07**

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

Inst.St	Satff Pt.	Bearing	Verticle angle	Staff Reading
P	A	135^0	$+10^0 30'$	1.360,1.915,2.470
	B	225^0	$+5^0 30'$	1.065,1.885,2.705

(b) Two straight lines intersect at chainage of 1200 and the angle of deflection is 60^0. If the radius of curve is 500m, determine the following: **07**
(1)Tangent length (2) Length of curve (3) Chainage of points of curvature and tangency (4) Degree of Curve (5) Apex distance (6) Mid Ordinate

OR

(b) Explain the Rankine's mthod for setting out simple circular curve. **07**

Q.3 **(a)** Enumerate the instruments used in sounding. Explain Sounding Machine. **07**

(b) What is hydrographic surveying? What are the uses of hydrographic surveying? **07**

OR

Q.3 **(a)** What is transition curve? What are the advantages of transition curve? **07**

(b) Give classification of curves? And Explain vertical curves. **07**

Q.4 **(a)** Explain different stages of Idealized Remote Sensing system. **07**

(b) What is remote sensing? What are the uses of remote sensing? **07**

OR

Q.4 **(a)** A vertical photograph was taken at an altitude of 1500m above MSL. Determine the scale of photograph for terrain laying at an elevation of 100m and 400m if the focal length of camera is 15cm. **07**

(b) Write a short note on Electro Magnetic Spectrum with neat sketch. **07**

Q.5 **(a)** Enlist and explain key components of GIS. **07**

(b) Explain types of Data in GIS **07**

OR

Q.5 **(a)** Define the following terms: (1)The Zenith and The Nadir **07**
(2) The Azimuth (3) The hour angle (4) Local Sidereal Time (5) The visible Horizon (6) The celestial Sphere (7) The Latitude

(b) (1)Write a short note on parallax bar **07**
(2)Explain Relief Displacement.