

Seat No.: _____

Enrollment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**D.ARCH - SEMESTER-III • EXAMINATION – WINTER- 2016****Subject Code: 3336203****Date: 19/11/2016****Subject Name: Surveying and leveling****Time: 10:30 AM TO 12:30 PM****Total Marks: 50****Instructions:**

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

- Q.1** (a) Explain the applications of surveying. **06**
 (b) Explain chaining on sloping ground with figure. **06**
- Q.2** (a) Draw a neat sketch of 20 m chain and label the parts. **06**
 (b) Calculate the included angles of traverse ABCDA from the following field data. **06**

| LINE | FORE BEARING |
|------|--------------|
| AB | 55° 00' |
| BC | 115 ° 15' |
| CD | 230 ° 45' |
| DA | 320 ° 30' |

Apply usual check.

OR

- (b) Calculate the included angles of traverse ABCDA from the following field data.
- 06**

| LINE | FORE BEARING | BACK BEARING |
|------|--------------|--------------|
| AB | 45° 30' | 225° 30' |
| BC | 110° 45' | 290° 45' |
| CD | 207° 15' | 27° 15' |
| DA | 330° 30' | 150° 30' |

Apply usual check.

- Q.3** (a) Derive formulas to find out area between base line and uneven boundary by trapezoid and Simpson's Rule. **06**
 (b) e following consecutive readings were taken by a dumpy level with a 4 m staff. **06**
 The instrument was shifted after 3rd and 6th reading .Assume B.M.R.L. as 100 m. Calculate reduced levels of all the points by H.I. method and show the arithmetic check.
 78, 1.25, 2.36, 1.45, 3.89, 2.60, 1.56, 3.86, 0.65 and 1.31

OR

- Q.3** (a) Explain base line, check line, tie line and main survey line. **06**
 (b) Find out area between base line and uneven boundary by trapezoid formula and Simpson's Rule .The offsets are as follows: The offset interval is 20 m. **06**
 0.36, 1.58, 2.69, 1.74, 2.12, 1.65 and 0.45

- Q.4** (a) Explain Remote sensing and its applications **07**
(b) Find area of uneven figure as per data obtained by a planimeter. Initial and final readings were 3.045 and 3.876 respectively. The anchor point was outside the figure. Zero didn't cross the index mark. Take $M = 100$ **07**

OR

- Q.4** (a) Draw symbols for Chain Line, Railway Line, Metal Road, Wall with gate, Wire fencing, North Line, Building. **07**
(b) What is closing error? Explain the Bowditch's method to adjust closing error. **07**