GUJARAT TECHNOLOGICAL UNIVERSITY
Diploma Architecture - SEMESTER–III • EXAMINATION – Summer 2018

Subject Code:3336203   **Date: 30/04/2018**
Subject Name: Surveying and levelling
Time: 02:30 PM to 04:30 PM   **Total Marks: 50**
Instructions:
1. Attempt all questions.
2. Mae suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1	**(a)**	Explain in detail principle of surveying.	**06**
	(b)	Explain instruments used in chain surveying.	**06**
Q.2	**(a)**	Write difference between prismatic compass and surveyors compass.	**06**
	(b)	Explain folding and unfolding of chain, also explain indirect ranging.	**06**

OR

	(b)	Calculate included angle of traverse ABCDA from the following field data. Also apply usual check.	**06**

Line	Fore Bearing	Back Bearing
AB	45°	225°
BC	123°	303°
CD	181°	1°
DA	289°	109°

Q.3	**(a)**	Define contour interval and draw contour for depression and vertical cliff.	**06**
	(b)	The following staff readings were observed successively with level, the instrument have been moved after 3rd, 6th and 8th readings. 2.225, 1.605, 0.995, 2.090, 2.865, 1.265, 0.600, 1.985, 1.045, 2.685 m. Assume reduced level of bench mark 135.75m. Calculate reduced level of all the points by any method and show the arithmetic check.	**06**

OR

Q.3	**(a)**	The following offsets were taken from a survey line to an irregular boundary line	**06**

Distance(m)	0	5	10	15	20	25	30	35	40
Offsets (m)	2.40	3.70	4.50	5.30	6.00	4.80	5.70	3.80	2.10

Find the area between the survey line, the curved boundary line and the first and last offsets by
   (I)   The trapezoidal rule
   (II)   Simpson's rule

	(b)	Explain horizontal control and vertical control for setting out works.	**06**
Q.4	**(a)**	Explain application of remote sensing.	**07**
	(b)	The area of an irregular figure was measured with a planimeter having the anchor point outside the figure. The initial reading and final reading were 5.835 and 9.354 respectively. The zero mark of the dial didn't pass the index mark during measurement. The tracing arm was get to the natural scale (M=100 cm²). the scale of the map was 1cm=10m. find the area of the figure.	**07**

OR

Q.4	**(a)**	Draw a neat ketch of planimeter and explain method of using planimeter.	**07**
	(b)	Explain application of GIS.	**07**

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