Seat No.: _____ Enrolment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY

D. Arch III – SEMESTER – III• EXAMINATION – WINTER - 2018

Subject Code:3336203 Date: 22/11/2018

Subject Name: Surveying and levelling

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.**
4. **Use of programmable & Communication aids are strictly prohibited.**
5. **Use of only simple calculator is permitted in Mathematics.**
6. **English version is authentic.**

Q.1 (a) Explain instruments used in chain surveying. **06**

(b) Write difference between Prismatic compass and Surveyor's compass. **06**

Q.2 (a) Define: (I) Reduced Level (RL) (II) Bench Mark (BM) (III) Mean sea level (IV) Surveying (V) Fore Bearing (VI) Horizontal Control. **06**

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

Line	Fore bearing
AB	124° 30'
BC	68° 15'
CD	312° 45'
DA	197°45'

OR

(b) Explain in brief: classification of surveying. **06**

Q.3 (a) List out different methods used for computing boundary area. Explain any two methods in detail. **06**

(b) The following staff readings were taken on an uneven ground with a 4m levelling staff. Calculate RL of all the points by HI method and apply usual check. The instruments were shifted after 3rd, 6th and 8th reading. The first reading was taken on bench mark of 135.75m. **06**

2.225,1.605, 0.995, 2.090, 2.865, 1.265, 0.600, 1.985, 1.045, 2.685 m

OR

Q.3 (a) The following offsets were taken at 10m interval from a survey line to an irregular boundary line **06**

2.40, 3.70, 4.50, 5.30, 6.00, 4.80, 5.70, 3.80, 2.10 m

Calculate the area enclosed between survey line, the irregular boundary line and the first and last offsets by

(1) The trapezoidal rule

(2) Simpson's rule

(b) Explain remote sensing and its application. **06**

Q.4 (a) The area of an irregular figure was measured with a planimeter having the anchor point outside the figure. The initial and final readings were 5.835 and 9.354 respectively. The zero mark of the dial didn't pass the index mark during the measurement. The tracing arm was set to the natural scale (M=100cm²). The scale of the map was 1cm=10m. Find **07**

the area of the figure.

(b) Explain the procedure of setting out building foundation. **07**

OR

Q.4 (a) Define Contour and draw contour for hill, depression and overhanging cliff. **07**

(b) Explain application of GIS. **07**

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