

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-I & II (OLD) EXAMINATION – SUMMER-2019****Subject Code: 110004****Date: 11/06/2019****Subject Name: Elements Of Civil Engineering****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) What is 'Surveying'? What are its objects and applications? Explain briefly its primary divisions. **07**
- (b) What is the use of conventional signs and symbols in surveying? Draw convention symbol of sub-station, concrete and chain line, Brick Masonry. **07**
- Q.2** (a) What is Ranging? Enlist instruments used in ranging. Explain the optical square and prism square in detail. **07**
- (b) A road actually 3000 m long was found to be 2980m. When measured with a defective chain. How many corrections do chains need? **07**
- a. Length of chain is 20m
  - b. Length of chain is 30m
- Q.3** (a) Define the following terms used in compass survey: **07**
- (i) True Meridian, (ii) Reduced bearing, (iii) Dip of needle, (iv) Back Bearing
  - (v) Magnetic declination. (vi) closed traverse (vii) Arbitrary Meridian
- (b) The following are the bearings observed in a closed traverse. Determine the value of interior angles. **07**

Line	Fore Bearing
PQ	150° 00'
QR	230° 30'
RS	306° 15'
ST	298° 00'
TP	49° 30'

- Q.4** (a) Enumerate various principles of planning and explain prospect and privacy in detail. **07**
- (b) Classify the buildings based upon occupancy and structure. List the common building components and state their functions. **07**
- Q.5** (a) Write a short note on: "B.O.T. projects for highways." **07**
- (b) The following consecutive readings were taken with a dumpy level 0.795, 1.655, 2.890, 3.015, 0.655, 0.625, 0.955, 0.255, 1.635, 0.860, 2.375. **07**
- The instrument was shifted after the fourth and eighth reading. The first reading was taken on a B.M. whose R.L. is 121.225 m. From above readings calculate the R.L. of the station & also apply necessary checks.
- Q.6** (a) Explain the characteristics and use of contour map. **07**
- (b) Explain the necessity of conservation and development of water resources in the region. **07**
- Q.7** (a) Enlist various material used in building construction. Discuss properties of good bricks and timber. **07**
- (b) Explain the use of global positioning system in surveying and write the applications of global positioning system. **07**

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