



GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER– 1st / 2nd • EXAMINATION – SUMMER 2018

Subject Code: 110004

Date: 24-05-2018

Subject Name: Elements of Civil Engineering

Time: 02:30 pm to 05:00 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) Draw the symbol of following objects which is used in Civil Engineering. **07**
North line, Main Station, Chain Line, Canal, Brick Work, Concrete Work, Earth Work.

(b) Explain Plain scale, Diagonal scale, and Representative fraction scale. **07**

Q.2 (a) Explain the fundamental principal of surveying. **07**

(b) A 20m chain was found to be 15cm too long after chaining a distance of 2000m. It was found to be 23 cm too long at the end of one day's work after chaining the total distance of 4200m. Find the true distance if chain was correct before the commencement of work. **07**

Q.3 (a) The following are the fore and back bearing of the lines of a closed traverse. **07**
Calculate the interior angles of the traverse.

Line	Fore bearing	Back bearing
AB	45° 30'	225° 30'
BC	100°	280°
CD	190° 30'	10° 30'
DE	280°	100°
EA	310° 30'	130° 30'

(b) Explain the Major types of Traffic Survey. **07**

Q.4 (a) The following readings were taken with a dumpy level and 4m leveling staff. **07**
The instrument was shifted 3rd and 6th readings. The readings are: 2.765, 3.335, 3.7, 1.850, 1.115, 2.110, 0.585, 0.995, and 1.515. The first reading was taken with a staff held on a benchmark of 500m. Calculate the reduce level of all points. Apply the usual checks.

(b) Define the Contours. Explain the characteristics of the Contours. **07**

Q.5 (a) Enlist the types of cement. Explain any two in detail. **07**

(b) Explain the types of building based upon its occupancy. **07**

Q.6 (a) Write the function of foundation and explain the Grillage foundation with sketch. **07**

(b) Explain the subsurface water sources. **07**

Q.7 (a) Explain the classification of dam based on the material used **07**

(b) Enlist the various tests on Bituminous Material. Explain any three in detail. **07**
