Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech., Winter 2017 - 18 Examination

Semester: 1, 2 **Date: 03/01/2018**

Subject Code: 03104102 **Time: 02:00PM to 04:30PM**

Subject Name: Elements of Civil Engineering **Total Marks: 60**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions (MCQ, Fill in the blanks, One word answer) (All are compulsory) **(15)**

(Each of one mark)

1. The actual size of a modular brick is
   a) 19 cm x 9 cm x 9 cm b) 19 cm x 19 cm x 9 cm
   c) 9 cm x 9 cm x 9 cm d) 19 cm x 19 cm x 19 cm
2. The top view of a building is known as
   a) Plan b) Elevation
   c) Section d) Details
3. A horizontal structural member provided above the window opening is called
   a) Plinth b) Lintel
   c) Sill d) Jamb
4. Principle of chain survey is
   a) Triangulation b) Traversing
   c) Parallelism d) Orientation
5. The line joining points of equal elevation (RL) is known as
   a) Horizontal line b) Gradient line
   c) Contour line d) Level line
6. Define MSL.
7. Convert WCB to QB for the angle 120°
8. What is meant by Dip of a needle?
9. Define Representative Fraction (R.F).
10. What are the components of concrete.
11. The number of links in a 20 m metric chain is _____.
12. The portion of the building above ground level is called _____.
13. A mixture of cement, sand and water is known as _____.
14. If scale of a map is 1 cm = 5 m, its R.F is _____.
15. If the back bearing of a line is S 30° W, its fore bearing is _____.

Q.2 **Answer the following questions**. (Attempt any three) **(15)**

A) Differentiate between Prismatic compass and Surveyor's compass.

B) What is dampness? What are the various causes of Dampness?

C) Define Declination. Magnetic bearing of a line AB is 120°30′ and the true bearing is 121°15′. Find the declination.

D) Differentiate between plane surveying and geodetic surveying.

Q.3 A) What are the different operations in chain surveying? Explain. **(07)**

B) The following staff readings were observed successively with a dumpy level. The instrument is moved by 3rd, 6th and 8th readings. **(08)**

1.850, 1.965, 1.675, 2.255, 2.360, 2.690, 0.685, 0.780, 0.965, 1.125

Enter the readings in record book and calculate RL using **H.I. method** if the first reading was taken at a BM of 150.00m

OR

B) The following staff readings were observed successively with a dumpy level. The instrument is moved by 3rd, 6th and 8th readings. **(08)**

1.850, 1.965, 1.675, 2.255, 2.360, 2.690, 0.685, 0.780, 0.965, 1.125

Enter the readings in record book and calculate RL using **Rise and Fall method** if the first reading was taken at a BM of 150.00m

Q.4 A) In a closed traverse the following bearings were observed with a compass. Calculate the interior angles. **(07)**

Line	Fore Bearing	Back Bearing
AB	65° 00′	245° 00′
BC	125° 30′	305° 30′
CD	200° 00′	20° 00′
DE	265° 15′	85° 15′
EA	330° 00′	150° 00′

OR

A) Explain the terminologies: **(07)**

a. GPS
b. GIS
c. Remote Sensing.

B) What are the properties of a good brick? **(08)**