

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**B. Tech. Summer 2017-18 Examination**

**Semester: 1, 2**  
**Subject Code: 03104102**  
**Subject Name: Elements of Civil Engineering**

**Date: 04/06/2018**  
**Time: 02:00pm to 04:30pm**  
**Total Marks: 60**

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**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****(15)**

1. What is the full form of MSL in surveying?
  - a) Mumbai Sea Level
  - b) Main Sea Land
  - c) Mean Sea Level
  - d) Monthly Sea Level
2. In chain survey the area is divided into
  - a) Rectangle
  - b) Circle
  - c) Section
  - d) Triangle
3. Surveyors compass gives the
  - a) Quadrantal Bearing.
  - b) Whole circle Bearing
  - c) Reduced Bearing
  - d) Surveyors Bearing
4. The staff reading taken on a point of known elevation is known as the
  - a) FS reading
  - b) IS reading
  - c) Parallel reading
  - d) BS reading
5. The presence of unwanted moisture in the structure of a building is known as
  - a) Dampness
  - b) Water Table
  - c) Potable Water
  - d) Cellular Water
6. Define Contour line.
7. If scale of a map is 1 mm = 15 m, its R.F is
8. What is meant by Dip of a needle?
9. Convert QB to WCB for the angle N 45° W
10. What are the components of RCC.
11. The length of 1 link in a 20 m metric chain is \_\_\_\_\_.
12. The portion of the building below the ground level is called \_\_\_\_\_.
13. The instrument used to mark the end of a chain is \_\_\_\_\_.
14. A mixture of cement, sand and water is known as \_\_\_\_\_.
15. What is the full form of GIS \_\_\_\_\_.

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

- A) Differentiate between Prismatic compass and Surveyor's compass.
- B) Enlist different branches of civil engineering. Explain any one in detail.
- C) What is a contour? What are its characteristics?
- D) Differentiate between plane surveying and geodetic surveying.

**Q.3 A) What is meant by building planning? What are the principles of planning?****(07)**

- B) The following staff readings were observed successively with a dumpy level. The instrument is moved by 2<sup>nd</sup>, 5<sup>th</sup> readings.**

1.750, 1.815, 1.730, 1.955, 2.125, 3.950, 0.655, 0.850, 0.970

Enter the readings in record book and calculate RL using H.I. method if the first reading was taken at a BM of 100.00m

**OR**

- B)** The following staff readings were observed successively with a dumpy level. The instrument is moved by 2<sup>nd</sup>, 5<sup>th</sup> readings. **(08)**

1.750, 1.815, 1.730, 1.955, 2.125, 3.950, 0.655, 0.850, 0.970

Enter the readings in record book and calculate RL using **Rise and Fall method** if the first reading was taken at a BM of 100.00m

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

<b>Line</b>	<b>Fore Bearing</b>	<b>Back Bearing</b>
AB	45° 30'	225° 30'
BC	120° 00'	300° 00'
CD	190° 30'	10° 30'
DA	284° 15'	104° 15'

**OR**

- A)** What is foundation? What are the objectives of foundation? How do you broadly classify foundation? **(07)**
- B)** i) What are the properties of cement? **(08)**  
ii) What is dampness? What are the causes of dampness?