

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-I &II (NEW) EXAMINATION – SUMMER-2019****Subject Code: 2110004****Date: 11/06/2019****Subject Name: Elements of Civil Engineering****Time: 10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Question No.1 is compulsory. Attempt any four out of remaining six questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

| Q.1 | Objective Question (MCQ) | Mark |
|------------|--|-------------|
| | | 07 |
| (a) | | |
| 1. | The infrastructural sector covers a wide range of service of _____ (a) Transportation, (b) Water Resources Project, (c) Power sector, (d) All above | |
| 2. | A triangle is said to be well-conditioned when its angle should lie between _____ (a) 15° and 115° , (b) 30° and 120°, (c) 55° and 115°, (d) 45° and 135° | |
| 3. | Offset are set by instrument (a) Cross staff (b) Prism square (c) Optical square (d) All of the above | |
| 4. | If W.C.B. of any line lies in quadrant IV then R.B. is equal to (a) WCB (b) 360o-WCB (c) 180o-WCB (d) WCB-180o | |
| 5. | The true bearing of a line is 124°. What is magnetic bearing, if declination is 2°30'E? (A) 126°30' (B) 120°30' (C) 121°30' (D) 122°30' | |
| 6. | The surface of still water is considered to be (a) Level (b) Horizontal (c) Curved (d) Smooth | |
| 7. | Which of the following scale is the largest one? (A) 1 cm = 50 m (B) 1:42000 (C) RF = 1/300000 (D) 1 cm = 50 km | |
| (b) | | 07 |
| 1. | Planimeter is useful to measure (a) length (b) area (c) volume (d) time | |
| 2. | GIS is useful for (a) environmental impact assessment (b) surveying and mapping (c) natural resource management (d) all of the above | |
| 3. | What is the size of a standard brick? | |
| 4. | The object of surveying is to prepare a (a) Drawing (b) Cross section (c) Sketch (d) Map | |
| 5. | If the depth of foundation is equal to or less than its width is known as _____. (a) Deep foundation, (b) Shallow foundation, (c) Combined foundation, (d) None of above | |
| 6. | Plan is prepared by taking the cross section at (a) Foundation level (b) Sill level (c) Slab level (d) Lintel level | |
| 7. | Portion of water held by trees during rainfall is known as (a) depression storage (b) Infiltration (c) Interception (d) None of the above | |

- Q.2** (a) Enlist the various branches of Civil Engineering. **03**
 (b) Explain properties and uses of concrete. **04**
 (c) What is ranging? Enumerate various methods of ranging? Explain with neat sketch the procedure for indirect ranging? **07**

- Q.3** (a) Give Classification of surveying. **03**
 (b) Discuss difference between plane and Geodetic Surveying. **04**
 (c) The following forebearings are observed in a closed traverse ABCD while surveying around a building. Calculate the included angles. **07**

| Line | Bearing |
|------|---------|
| AB | 124° |
| BC | 60° |
| CD | 318° |
| DA | 200° |

- Q.4** (a) What is local attraction? What are the sources of local attraction? **03**
 (b) Write characteristics of contours. **04**
 (c) The following staff readings were observed successively with a level the instrument having been moved after third, sixth and eighth readings 2.225, 1.605, 0.995, 2.090, 2.865, 1.265, 0.600, 1.985, 1.045, 2.685 m. Enter the above readings in a page of level book and calculate the reduced levels of all the points if the first reading was taken with a staff held on bench mark of 135.75 m. **07**

- Q.5** (a) Write the function of the given building component: **03**
 1. Plinth 2. Lintel 3. Wall
 (b) Write short notes on Aspect & Prospect. **04**
 (c) Draw neat sketch of roof top rain water harvesting system and then write benefits of rainwater harvesting. **07**

- Q.6** (a) Draw neat sketch of R.C.C. lintel with chajja. **03**
 (b) Explain different types of Building loads. **04**
 (c) State the advantages and disadvantages of railway transport. **07**

- Q.7** (a) Enlist various material used in building construction. **03**
 (b) Sketch the traffic signs for following: **04**
 a. STOP **07**
 b. GIVE WAY
 c. T Intersection
 d. One way
 (c) Give introduction of GIS, GPS and remote sensing in brief.
