

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
(a)		07
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) $360^\circ - \text{WCB}$ (c) $180^\circ - \text{WCB}$ (d) $\text{WCB} - 180^\circ$	
5.	The true bearing of a line is 124° . What is magnetic bearing, if declination is $2^\circ 30' \text{E}$? (A) $126^\circ 30'$ (B) $120^\circ 30'$ (C) $121^\circ 30'$ (D) $122^\circ 30'$	
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 eight 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.
