

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-I & II(NEW) EXAMINATION – SUMMER 2023

Subject Code:3110004

Date:04-08-2023

Subject Name:Basic Civil Engineering

Time:10:30 AM TO 01:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

|   | Marks     |
|---|-----------|
| <b>Q.1</b> (a) Write the physical characteristics of waste water.   | <b>03</b> |
| (b) Discuss the characteristics of good bricks.   | <b>04</b> |
| (c) Describe the fundamental principle of surveying.  | <b>07</b> |
| <b>Q.2</b> (a) Draw the symbol for following material in section.   | <b>03</b> |
| 1. Earth  |           |
| 2. Concrete   |           |
| 3. Metal Section  |           |
| (b) Draw line diagram for 2 BHK residential building  | <b>04</b> |
| (c) List the methods for natural growth and discuss ribbon development with their drawbacks in detail.  | <b>07</b> |
| <b>OR</b>   |           |
| (c) Describe the remedial measures to prevent the slum.   | <b>07</b> |
| <b>Q.3</b> (a) Write the full name of following abbreviations.  | <b>03</b> |
| 1. R.C.C.   |           |
| 2. G.L.   |           |
| 3. F.S.I.   |           |
| (b) Describe principles of building planning related to elevation of building.  | <b>04</b> |
| (c) List the types of cement and discuss any five in detail.  | <b>07</b> |
| <b>OR</b>   |           |
| <b>Q.3</b> (a) Do the unit conversion of followings.  | <b>03</b> |
| 1. 5 feet = _____ inches  |           |
| 2. 10 feet square = _____ meter square  |           |
| 3. 2000 centimeter cube = _____ liter   |           |
| (b) State difference between intersection at grade and grade separated intersection with neat sketch.   | <b>04</b> |
| (c) Discuss the various construction techniques for low cost housing.   | <b>07</b> |
| <b>Q.4</b> (a) A 20m chain was found to be 10 cm long at the end of day's work after measuring 5000m. If the chain was correct before the commencement of the work, find the correct length of the lines. | <b>03</b> |
| (b) Differentiate between plane and geodetic surveying.   | <b>04</b> |

- (c) The following readings were taken with a level and 4m staff. Draw up a level book page and calculate the levels by height of instrument method. 07  
 0.578,0.933,1.768,2.450,3.005,0.567,1.181,1.888,3.679,  
 0.612, 0.705 and 1.810.  
 The instrument was shifted after 5<sup>th</sup> and 9<sup>th</sup> reading. The R.L. of first station is 58.250m.

OR

- Q.4 (a) Draw a plane scale of 1 cm = 5m and show the 20m on it. 03  
 (b) Differentiate between prismatic compass and surveyor compass. 04  
 (c) The following bearings were observed with a compass for the closed traverse ABCDA. 07

| Line | FB   | BB   |
|------|------|------|
| AB   | 110° | 290° |
| BC   | 190° | 10°  |
| CD   | 300° | 121° |
| DA   | 20°  | 199° |

Where do you suspect the local attraction? Find the included angles.

- Q.5 (a) Draw elevation and section of framed and panelled door. 03  
 (b) Draw a typical plan of drainage for small residential building. 04  
 (c) Differentiate between Flemish bond and English bond. 07

OR

- Q.5 (a) List the general features of earthquake buildings and discuss dimensions of buildings in detail. 03  
 (b) Discuss the conservation strategies of heritage buildings. 04  
 (c) Differentiate between load bearing and framed structure. 07

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