

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- SEMESTER-I & II EXAMINATION – WINTER 2024****Subject Code:3110004****Date:08-01-2025****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) Enlist different branches of civil engineering and explain any two.	<b>03</b>
	(b) Discuss properties of cement.	<b>04</b>
	(c) What are the key components of GIS? Describe them briefly.	<b>07</b>
<b>Q.2</b>	(a) Convert the following WCB in to RB: 1) 55°30' 2) 279°00' 3) 190°00'	<b>03</b>
	(b) Explain primary division of surveying.	<b>04</b>
	(c) Discuss classification of buildings based on structure.	<b>07</b>
<b>OR</b>		
	(c) Write short note on HVAC.	<b>07</b>
<b>Q.3</b>	(a) Discuss aims and objectives of town planning.	<b>03</b>
	(b) Describe pillars of smart city.	<b>04</b>
	(c) Describe the important remedial measures to prevent slum formation.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Discuss traffic characteristics.	<b>03</b>
	(b) Explain site plan and key plan.	<b>04</b>
	(c) Enumerate various principles of planning and explain any two in detail.	<b>07</b>
<b>Q.4</b>	(a) What are the various types of loads acting on building.	<b>03</b>
	(b) Discuss importance of zoning.	<b>04</b>
	(c) Discuss rooftop rain water harvesting system with neat sketch.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) Enlist the various instruments used in chaining.	<b>03</b>
	(b) Differentiate between prismatic compass and surveyor compass.	<b>04</b>
	(c) Discuss the general features of earthquake resistant buildings.	<b>07</b>
<b>Q.5</b>	(a) What are the different types of meridians?	<b>03</b>
	(b) Explain the working principle of Line ranger.	<b>04</b>
	(c) The following are bearings of a closed traverse ABCDA. Find out interior angles and correct them if necessary.	<b>07</b>

LINE	FB	B.B
AB	45°00'	225°00'
BC	123°30'	303°30'
CD	181°00'	1°00'
DA	289°00'	109°00'

**OR**

- Q.5**
- |            |   |           |
|------------|---|-----------|
| <b>(a)</b> | What are the uses of contour map?   | <b>03</b> |
| <b>(b)</b> | Describe various types of benchmarks.   | <b>04</b> |
| <b>(c)</b> | The following observations were taken with dumpy level and four-meter levelling staff. The instrument was shifted after 4 <sup>th</sup> and 7 <sup>th</sup> readings. The first reading was taken on a B.M whose RL is 15.575m, prepare a page of level book and calculate RLs of all the points. The observation was taken at every 30m interval. Also find the gradient between first and last point. The observations are: 0.565, 1.250, 1.675, 3.695, 0.125, 2.345, 3.245, 0.500, 1.785, 2.535. | <b>07</b> |

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