

**R.N.G.PATEL INSTITUTE OF TECHNOLOGY-RNGPIT**  
(An Autonomous Institute U/s UGC Act 1956)

**B.Tech. SEMESTER-I, SEMESTER END EXAMINATION – WINTER 2025**

**SUBJECT CODE: 2CV101**

**DATE: 22-12-2025**

**SUBJECT NAME: FUNDAMENTALS OF CIVIL ENGINEERING**

**TIME: 11:00 AM to 01:30 PM**

**TOTAL MARKS: 70**

**Instructions**

1. It is **compulsory** for students to write **Enrolment No. /Seat No.** on the question paper.
2. Write answers of **Section A** and **Section B** in **separate answer books**.
3. Attempt all questions from both **Section A** and **Section B**.
4. Each section carries **35 marks**, with a total of **70 marks** for the examination.
5. The figures to the right of each question indicate full marks, make suitable assumptions with justification.
6. BL - Cognitive Level (As per Revised Bloom's Taxonomy) (R-Remember, U-Understanding, A –Application, N –Analyze, E – Evaluate, C -Create), CO - Course Outcomes.

**SECTION A**

		Marks	BL	CO
<b>Q.1</b>	(a) What is the role of civil engineer in the society?	03	R	1
	(b) Discuss the impact of infrastructural development on economy of country.	04	U	1
<b>Q.2</b>	(a) Write down application of surveying.	03	A	2
	(b) Describe primary division of surveying.	04	U	2
	(c) Explain various operation involved in chain surveying.	07	A	2

**OR**

<b>Q.2</b>	(a) What is offsetting? Explain various types of offsets.	03	R	2
	(b) What is ranging? Explain various methods of ranging.	04	A	2
	(c) Enlist and explain various instruments used in chain surveying.	07	U	2
<b>Q.3</b>	(a) Write down properties of good aggregate.	03	R	3
	(b) Discuss classification of bricks.	04	U	3
	(c) Explain physical and chemical properties of the cement.	07	A	3

**OR**

<b>Q.3</b>	<b>(a)</b> Write down quality of a good timber.	<b>03</b>	<b>U</b>	<b>3</b>
	<b>(b)</b> Write down properties of a good brick.	<b>04</b>	<b>U</b>	<b>3</b>
	<b>(c)</b> Enlist and explain types of cements.	<b>07</b>	<b>R</b>	<b>3</b>

**SECTION B**

		<b>Marks</b>	<b>BL</b>	<b>CO</b>
<b>Q.4</b>	<b>(a)</b> Explain in brief “Green Building”	<b>03</b>	<b>U</b>	<b>6</b>
	<b>(b)</b> Which are the different Green Building rating systems? Explain any one in detail.	<b>04</b>	<b>U</b>	<b>6</b>
<b>Q.5</b>	<b>(a)</b> Explain orientation of building with neat sketches.	<b>03</b>	<b>R</b>	<b>4</b>
	<b>(b)</b> What are the basic requirements for building planning?	<b>04</b>	<b>U</b>	<b>4</b>
	<b>(c)</b> What is grillage footing? When do you go for such footings? Neatly sketch a typical grillage footing.	<b>07</b>	<b>U</b>	<b>4</b>

**OR**

<b>Q.5</b>	<b>(a)</b> How will you select the site for residential building?	<b>03</b>	<b>R</b>	<b>4</b>
	<b>(b)</b> Write short notes on energy efficiency in planning of building.	<b>04</b>	<b>U</b>	<b>4</b>
	<b>(c)</b> Differentiate Load Bearing Structure and Framed Structure.	<b>07</b>	<b>U</b>	<b>4</b>
<b>Q.6</b>	<b>(a)</b> What are the different sources of water? Describe surface water and groundwater in detail.	<b>03</b>	<b>R</b>	<b>5</b>
	<b>(b)</b> Describe various modes of transportation.	<b>04</b>	<b>U</b>	<b>5</b>
	<b>(c)</b> Write short note on Airport Authority of India.	<b>07</b>	<b>R</b>	<b>5</b>

**OR**

<b>Q.6</b>	<b>(a)</b> Explain the concept of Watershed Development. Discuss its objectives, benefits, and methods.	<b>03</b>	<b>R</b>	<b>5</b>
	<b>(b)</b> Describe role of transportation for the development of rural areas in India.	<b>04</b>	<b>U</b>	<b>5</b>
	<b>(c)</b> List various traffic signs & Draw any two.	<b>07</b>	<b>R</b>	<b>5</b>

\*\*\*\*\*