

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

B.Tech. SEMESTER-III, SEMESTER END EXAMINATION – WINTER 2025

SUBJECT CODE: 1CV304

DATE: 23-12-2025

SUBJECT NAME: CONCRETE TECHNOLOGY

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
Q.1	(a) List out and explain any three factors influencing the choice of mix proportion of concrete.	03	U	4
	(b) Discuss first four step procedure of concrete mix design as per IS:10262.	04	A	4
Q.2	(a) Enlist different types of Cement.	03	U	1
	(b) Explain the role of each Bogue's compound in the process of hydration of cement.	04	U	1
	(c) Explain dry process for manufacturing of cement.	07	A	1
OR				
Q.2	(a) Explain the precautions to be taken in storing cement.	03	U	1
	(b) Explain Alkali Aggregate reaction.	04	U	1
	(c) Describe the test for determining initial and final setting time of cement.	07	A	1
Q.3	(a) Explain bleeding of concrete.	03	U	2
	(b) Explain the causes and prevention of segregation of concrete.	04	U	2
	(c) Enlist various factors affecting workability of concrete and discuss it in detail.	07	U	2

OR

Q.3	(a)	Enlist different methods of curing of concrete	03	U	2
	(b)	State the methods adopted for the transportation of concrete. Explain any one method.	04	U	2
	(c)	Explain Slump cone test for measuring the workability of concrete.	07	U	2

SECTION B

			Marks	BL	CO
Q.4	(a)	Explain creep and factors affecting creep.	03	N	3
	(b)	What is shrinkage? Give classification of shrinkage.	04	U	3
Q.5	(a)	Explain Light weight concrete.	03	N	5
	(b)	Discuss High volume fly ash concrete.	04	U	5
	(c)	State the different types of special concreting techniques and Explain ready mix concrete with its merits.	07	A	5

OR

Q.5	(a)	Explain pumped concrete.	03	N	5
	(b)	What is Hot & cold weather concreting?	04	U	5
	(c)	Differentiate between high-strength and high-volume concrete.	07	N	5
Q.6	(a)	What is sulphate attack?	03	R	6
	(b)	Write short note on Rebound hammer test.	04	U	6
	(c)	Discuss Problems faced during Non-destructive evaluation.	07	N	6

OR

Q.6	(a)	Explain Freeze and thaw phenomenon.	03	R	6
	(b)	Write short note on Alkali-aggregate reaction.	04	U	6
	(c)	Discuss Failure of concrete under low stress in detail.	07	N	6
