

CBCS SCHEME

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BCV503

Fifth Semester B.E./B.Tech. Degree Examination, June/July 2026

Concrete Technology

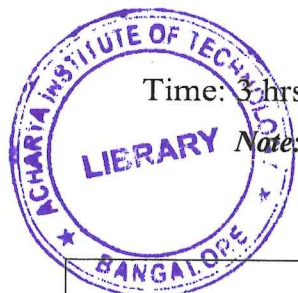
Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. M : Marks, L: Bloom's level, C: Course outcomes.

3. Use of IS 10262-2019 is permitted.



Module – 1			M	L	C
Q.1	a.	Explain the dry process of manufacturing of cement.	8	L2	CO1
	b.	Explain the effect of following on the properties of concrete: i) Plasticisers ii) Air Entraining Admixtures	8	L2	CO1
	c.	What is bulking of fine aggregate? State the importance of it in concrete.	4	L1	CO1
OR					
Q.2	a.	List the different physical tests on cement. Discuss the method on finding compressive strength of cement.	10	L2	CO1
	b.	Explain the effect of flyash and silica fume on fresh and hardened properties of concrete.	10	L1	CO1
Module – 2					
Q.3	a.	Define workability and explain the compaction factor method of measuring workability.	10	L2	CO2
	b.	List the methods of controlling heat during mass concreting.	6	L2	CO2
	c.	What is Segregation and Bleeding?	4	L1	CO2
OR					
Q.4	a.	Discuss on manufacturing process of concrete.	12	L2	CO2
	b.	Explain the water curing methods with their applications.	8	L1	CO2
Module – 3					
Q.5	a.	With the neat sketch, explain the chloride induced corrosion. Mention the types of damage on concrete.	12	L2	CO3
	b.	What is Creep? Discuss the factors affecting the creep in concrete.	8	L2	CO3

OR

Q.6	a.	What is NDT? Discuss the principle, methods and criteria to judge quality of concrete as per ultrasonic pulse velocity test method with sketch.	12	L2	CO3
	b.	Compare the following: i) Plastic shrinkage and drying shrinkage ii) Penetration and Pullout Test	8	L2	CO3

Module – 4

Q.7	a.	Enlist the different types of exposure conditions as per IS 456:2000. Explain how exposure condition affects concrete mix design.	10	L2	CO4
	b.	Enumerate the procedure of mix-proportioning of concrete as per IS 10262 - 2019	10	L2	CO4

OR

Q.8	Solve for mix proportioning as per IS10262-2019 for the given details: Grade of concrete = M30 Type of cement – OPC 43 grade Exposure condition – moderate Quality control – Good ; workability – 75 mm slump Specific gravity of cement – 3.15 Specific gravity of super plasticizer – 1.115 Flyash replacement upto 30% Specific gravity of flyash – 2.2 Minimum cement content – 320 kg/m³ Maximum permissible w/c ratio = 0.45 Fine aggregate: M-sand confirming to zone II Coarse aggregate: 20 mm maximum nominal size (crushed angular) <table><tr><td></td><td>Coarse Aggregate</td><td>Fine Aggregate</td></tr><tr><td>Specific Gravity</td><td>2.72</td><td>2.62</td></tr><tr><td>Water Absorption</td><td>0.5%</td><td>1.0%</td></tr><tr><td>Moisture content</td><td>0%</td><td>0%</td></tr></table>		Coarse Aggregate	Fine Aggregate	Specific Gravity	2.72	2.62	Water Absorption	0.5%	1.0%	Moisture content	0%	0%	20	L3	CO4
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Specific Gravity	2.72	2.62														
Water Absorption	0.5%	1.0%														
Moisture content	0%	0%														

Module – 5

Q.9	a.	Sketch a typical layout of RMC plant with its functioning units and state advantages of RMC.	8	L1	CO5
	b.	List the mix design principles of self-compacting concrete.	6	L1	CO5
	c.	List the types of light weight concrete.	6	L1	CO5

OR

Q.10	a.	List any 4 advantages and disadvantages of high strength concrete.	8	L1	CO5
	b.	Compare Geopolymer concrete with conventional concrete.	8	L2	CO5
	c.	List the applications of fibre reinforced concrete.	4	L1	CO5
