

CBGS SCHEME

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BCV405C

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2026 Concreting Techniques and Practices

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 IS10262-2019 is permitted. IS 456 is permitted.*

Module – 1				M	L	C
Q.1	a.	Explain the methods of producing low carbon cements.		8	L2	CO1
	b.	Explain the following: i) GGBS ii) Silicafume		8	L2	CO1
	c.	List the different types of cement.		4	L1	CO1
OR						
Q.2	a.	Explain the method of production of cement.		8	L2	CO1
	b.	What is pozzolanic reaction? Discuss on effect of flyash in fresh and hardened concrete.		8	L2	CO1
	c.	List the different physical properties of cement.		4	L1	CO1
Module – 2						
Q.3	a.	Explain the types and action of super plasticizer on concrete.		12	L2	CO2
	b.	Discuss the grading of aggregate along with its necessity in mix proportioning.		8	L2	CO2
OR						
Q.4	a.	Explain the role of following admixtures in concreting: i) Accelerators ii) Retarders iii) Air entraining admixtures.		12	L2	CO2
	b.	Mention the permissible limits for the following impurities in water used for both plain and reinforced concrete: i) Chlorides ii) Sulphates iii) Organic iv) Inorganic		8	L2	CO2

Module – 3

Q.5	a.	Explain the method of finding workability of concrete by slump cone test with neat sketches.	8	L2	CO3
	b.	Compute and arrive at the mix proportion by volumetric method using following data for M20 grade concrete: Air content = 5% w/c ratio = 0.5 water content for slump of 50 mm = 185 kg/m ³ (sand/total aggregate) = 0.36 Specific gravity of cement = 3.15 Specific gravity of fine aggregate = 2.60 Specific gravity of coarse aggregate = 2.67 Standard deviation = 3 MPa	8	L3	CO3
	c.	What is high performance concrete? How is it different from normal concrete?	4	L1	CO3

OR

Q.6	Solve for concrete mix proportioning as per IS10262-2019 from the following data: Grade of concrete = M25 Cement = OPC 43 Exposure condition = moderate Quality control = Good Specific gravity of cement = 3.15 Slump @ site is 75 mm Placing concrete with pumps SP @ 1% dosage and specific gravity is 1.115 Coarse aggregate – 20 mm maximum nominal size (crushed angular) Fine aggregate is M-sand confirming to zone II Use the flyash to replace the cement by 30% specific gravity of fly ash is 2.2 <table><tr><td></td><td>Specific gravity</td><td>Water absorption</td><td>Moisture content</td></tr><tr><td>Fine aggregate</td><td>2.62</td><td>1.0%</td><td>Nil</td></tr><tr><td>Coarse aggregate</td><td>2.72</td><td>0.5%</td><td>Nil</td></tr></table> Minimum cement content is 300 kg/m³ maximum permissible w/c is 0.50. Assume wherever data necessary.		Specific gravity	Water absorption	Moisture content	Fine aggregate	2.62	1.0%	Nil	Coarse aggregate	2.72	0.5%	Nil	20	L3	CO3
	Specific gravity	Water absorption	Moisture content													
Fine aggregate	2.62	1.0%	Nil													
Coarse aggregate	2.72	0.5%	Nil													

Module – 4

Q.7	a.	Discuss on methods of compaction of concrete.	8	L2	CO4
	b.	What are the advantages of using ready mixed concrete over site mixed concrete?	8	L1	CO4
	c.	What is cold joint? How to prevent it?	4	L1	CO4

OR

Q.8	a.	List the methods of curing the concrete and explain any two of them.	8	L2	CO1
	b.	Discuss the following methods of transporting the concrete: i) Transit mixer ii) Pumping	8	L1	CO2
	c.	List the different functional units of batching plant.	4	L1	CO2
Module – 5					
Q.9	a.	Define SCC and list the different tests to characterize SCC.	8	L1	CO4
	b.	Discuss on ferrocement, its materials and advantages.	8	L2	CO4
	c.	Compare plastic shrinkage crack and plastic settlement.	4	L1	CO4
OR					
Q.10	a.	Explain the advantages and applications of FRC.	8	L1	CO4
	b.	Explain the method of shotcreting with neat sketch.	8	L2	CO4
	c.	Give a note on ingredients of geopolymer concrete.	4	L1	CO4
