MUSN CE

**BCV503** 

## Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025 Concrete Technology

Time: 3 hrs.

Max. Marks: 100

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

2. Use IS: 456-2000, IS 10262: 2019 are permitted.

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

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resh concrete.  10 L2 CO1  2 ceting workability.  10 L2 CO2  2 the workability of fresh concrete.  10 L2 CO2  2 caction of concrete. Also explain paction and compaction by needle  2 ceting creep of concrete.  10 L2 CO2  10 L2 CO3  10 L2 CO3  10 L2 CO3  10 L2 CO3			ii) Suiphate Resisting Cement (SRC)			
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tack on Hardened concrete.  10 L2 CO2  11 L2 CO3  11 L2 CO3  11 L2 CO3	·-		and the control of the gardeness.	10		001
tack on Hardened concrete.  10 L2 CO2  10 L2 CO3  10 L2 CO3  10 L2 CO3		b.	Explain the effects of fly ash and silica fresh concrete.	10	L2	CO1
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te. Also what is water curing and 10 L2 CO2  -3 Secting creep of concrete. 10 L2 CO3  Explain plastic shrinkage and drying 10 L2 CO3  ttack on Hardened concrete. 10 L2 CO3		b.	Briefly, explain any 2 lab test to measure the workability of fresh concrete.	10	L2	CO <sub>2</sub>
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recting creep of concrete.  10 L2 CO3  Explain plastic shrinkage and drying 10 L2 CO3  ttack on Hardened concrete.  10 L2 CO3  10 L2 CO3			different methods such as Hand Compaction and compaction by needle			
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recting creep of concrete.  10 L2 CO3  Explain plastic shrinkage and drying 10 L2 CO3  ttack on Hardened concrete.  10 L2 CO3  10 L2 CO3		b.	Explain the need for curing of concrete. Also what is water curing and	10	12	CO2
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ttack on Hardened concrete. 10 L2 CO3  10 L2 CO3		-	Module – 3			
ttack on Hardened concrete.  10 L2 CO3  10 L2 CO3	Q.5	a.	Explain creep of concrete and factors affecting creep of concrete.	10	L2	CO3
ttack on Hardened concrete.  10 L2 CO3  10 L2 CO3				1		
10 L2 CO3		b.	Explain Shrinkage of concrete. Also explain plastic shrinkage and drying	10	L2	CO3
10 L2 CO3			shrinkage of concrete.	1		
10 L2 CO3		l	O.D.	L .		
10 L2 CO3	0.6	1	OR	10	1.2	CO2
-4	Q.6	a.	Describe Sulphate attack and Chloride attack on Hardened concrete.	10	L2	CO3
-4		h	Explain: i) Rebound Hammer test	10	1.2	CO3
		0.	ii) Ultrasonic pulse velocity.	10	1.2	COS
			ii) Olitasoliie palso velocity.			
sion and write the stone involved in 20 Y2 CO4		1	Module – 4		1	
sign and write the steps involved in   20   L2   CO4	Q.7		Explain Significance of concrete mix design and write the steps involved in	20	L2	CO4
			concrete mix design as per IS code and also discuss the variables in			
			proportioning of concrete.			
	Q.7		concrete mix design as per IS code and also discuss the variables in	20	I	.2

		OR			
Q.8		Design a concrete mix for grade M <sub>25</sub> a) Grade designation → M-25  b) Type of cement → OPC 53 grade  c) Maximum nominal Aggregate size → 20mm  d) Minimum cement content → 310 Kg/m³  e) Maximum water cement ratio → 0.45  f) Workability → 50-75 mm (Slump)  g) Exposure condition → Normal  h) Degree of supervision → Good  i) Type of aggregate → Crushed angular aggregate  j) Maximum cement content → 540 Kg/m³  k) Chemical admixture type → Super plasticizer  l) Specific gravity of cement → 3.15  m) Specific gravity of water → 1.0  n) Specific gravity of C.A → 2.882  o) Water absorption of C.A → 1%  p) Free surface moisture: NiL  q) Specific gravity of fine aggregate: 2.605  r) Water absorption of fine aggregate: 1.23%  s) Free surface moisture of F.A: Nil.	20	L3	CO4
		Module – 5			
Q.9	a.	Explain the manufacturing process of Ready mix concrete.	10	L2	CO5
	b.	Explain the concept of Self Compacting Concrete (SCC). And its advantages and disadvantages of SCC.	10	L2	CO5
		OR			
Q.10	a.	What is light weight concrete? Explain different materials used in light weight concrete.	10	L2	CO5
	b.	Explain: i) High strength concrete ii) High performance concrete.	10	L2	CO5

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