

Model Question Paper-1 with effect from 2019-20 (CBCS Scheme)

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Fourth Semester B.E. Degree Examination CONCRETE TECHNOLOGY 18CV44

TIME: 03 Hours

Max. Marks: 100

- Note: 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.
02. Use of IS:10262-009 is permitted

Questions			*Bloom's Taxonomy Level	Marks
Module -1				
Q.01	a	What are the steps taken to reduce carbon footprint of cement?	L2 & CO1	05
	b	Discuss about the field tests conducted on cement	L2 & CO1	05
	c	Explain the constituents of cement with their percentage and their function?	L2 & CO1	10
OR				
Q.02	a	List out Bogue's compounds and explain their contribution towards gaining of strength of cement.	L2 & CO1	08
	b	Explain importance of size, shape and texture of aggregates.	L2 & CO1	06
	c	Discuss the importance of use of the following in the manufacture of concrete: <i>Recycled Aggregates, GGBS, Silica Fume</i>	L2 & CO1	06
Module-2				
Q.03	a	What is bulking of sand? Explain the importance of bulking of sand.	L2 & CO2	04
	b	Explain the factors affecting workability of fresh concrete	L2 & CO2	10
	c	Explain the effects of segregation and bleeding on concrete	L2 & CO2	06
OR				
Q.04	a	Mention the various stages involved in manufacturing of concrete. Discuss any two stages.	L2 & CO2	10
	b	Why curing is needed? Explain different methods of curing of concrete.	L2 & CO2	10
Module-3				
Q.05	a	Define shrinkage and creep of concrete? Discuss about the factors affecting shrinkage of concrete.	L2 & CO3	10
	b	Mention Non-destructive tests conducted on hardened concrete. Explain any two of them.	L2 & CO3	10
OR				
Q.06	a	What is durability of concrete? what are the factors affecting durability of concrete	L2 & CO3	10
	b	What is maturity of concrete? Explain its significance in gaining the strength of concrete.	L2 & CO3	10
Module-4				
Q.07	a	Explain significance of concrete mix design and write the steps involved in concrete mix design as per IS code and also discuss the variables in proportioning of concrete	L2 & CO4	20
OR				
Q.08	a	Design a concrete mix for grade M 25 a. Grade designation: M 25 b. Type of cement: OPC 43 grade	L5 & CO4	20

		c. Max. nominal size of aggregates 20mm down d. Min cement content: 300kg/m ³ e. Water cement ratio :0.5 f. Workability: 75mm slump g. No chemical admixture h. Fine aggregate: zone II i. Exposure condition: moderate j. Method of concrete placing: manual k. Max cement content :450kg/ m ³ l. Specific gravity of cement: 3.15 m. Specific gravity of coarse aggregate :2.80 n. Water absorption of coarse aggregate :1% o. Free surface moisture: nil p. Specific gravity of fine aggregate :2.65 q. Water absorption of fine aggregate: 2% r. Free surface moisture: 2%		
Module-5				
Q.09	a	Mention the materials used in Self-compacting concrete. State advantages and disadvantages of self-compacting concrete.	L2 & CO5	10
	b	Briefly discuss the advantages and disadvantages of Ready-mix concrete	L2 & CO5	10
OR				
Q.10	a	What is light weight concrete? State the advantages of light weight concrete	L2 & CO5	10
	b	Explain fibre types used in fibre reinforced concrete	L2 & CO5	10