Lesson plan of Concrete Technology of 6th sem 22-2023

Unit	Topic	Period	Total period	Grand total
Concrete as a construction material	Grades of concrete.	1	2	70
	Advantages and disadvantages of concrete.	1		
Cement	Composition, hydration of cement,	2	6	
	water cement ratio and compressive strength, fineness of cement, setting time, soundness	2		
	Types of cement	2		
Aggregate, Water and Admixtures:	Classification and characteristics of aggregate, fineness modulus, grading of aggregate,I.S.383	2	6	
	Quality of water for mixing and curing.	2		
	Important functions, classification of admixtures, I.S 9103, accelerating admixtures, retarding admixtures, water reducing admixtures, air containing admixtures	2		
Properties of fresh concrete	Concept of fresh concrete	1	6	
	workability	1		
	slump test, compacting factor test, V-bee consistency test and flow test, requirement of workability,I.S.1199	4		
Properties of hardened concrete	Cube and cylinder compressive strengths,	1	8	
	flexural strength of concrete	1		
	stress-strain and elasticity	1		
	phenomena of creep and shrinkage,	1		
	permeability, durability of concrete	2		
	sulphate, chloride and acid attack on concrete, efflorescence	2		
Concrete mix Design	Introduction, Nominal mix concrete &design mix concrete.	1	5	
	Data or input required for mix design.	1		
	Basic consideration for concrete mix design, Methods of proportioning concrete mix – I.S Code method of mix design(I.S.10262)	3		
Production of concrete	Batching of materials	1	6	
	mixing of concrete materials	1		
	Transportation, placing of concrete, compaction of concrete (vibrators)	1		
	Curing of concrete	1		

	Formwork-requirements and types ,stripping of forms	2	
Inspection and Quality Control of Concrete	Quality control of Concrete as per I.S.456, Factors causing the variations in the quality of concrete	2	6
	Mixing, Transporting, Placing &curing requirements of Concrete as per I.S.456.	2	
	Inspection and Testing as per Clause 17 of IS:456.	1	
	Durability requirements of Concrete as per I.S:456.	1	
Special Concrete	Introduction to ready mix concrete,	2	6
	High performance concrete,	2	
	Silica fume concrete	1	
	Shot-crete concrete or gunitting	1	
Deterioration of concrete and its prevention:	Types of deterioration,	2	6
	Prevention of concrete deterioration	2	
	Corrosion of reinforcement	1	
	Effects and prevention	1	
Repair technology for concrete structures:	Symptom, cause and prevention and remedy of defects during construction	1	8
	Cracking of concrete due to different reasons	2	
	Repair of cracks for different purposes	2	
	Selection of techniques	1	
	Polymer based repairs	1	
	Common types of repairs	1	
Revision	MCQ type questions discussion	5	5

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