JHARSUGUDA ENGINEERING SCHOOL, JHARSUGUDA

Department of Civil Engineering

6th Sem (3rd Year) Summer 2023

Theory No: 4

Subject: Concrete Technology

Name Of The Faculty:

Sri Dhanurjaya Behera

Smt. Deepanjali Sethi

Concrete as a construction material: 1	-		Γ		T
1 1 1.1 Grades of concrete. 2 W1 1 1.2 Advantages and disadvantages of concrete. 3 Cement: 				Topics to be covered	Remarks
2 W1 Concrete Cement: Cement: 2.1 Composition, hydration of cement, water cement ratio and compressive strength, fineness of cement, setting time, Multiple Setting time, soundness of cement. Types of Cement Revision 3.1 Classification and characteristics of aggregate, fineness modulus, grading of aggregate, I.S.383 3.2 Quality of water for mixing and curing. 1 3.3 Important functions, classification of admixtures, I.S 9103, 14 W4 accelerating admixtures	1		1		
1 2.1 Composition, hydration of cement, 1 water cement ratio and compressive strength, 5 Infineness of cement, setting time, 6 W2 I soundness of cement. 7 Infineness of Cement 8 Revision 9 Infineness modulus, grading of aggregate, 10 W3 Infineness modulus, grading of aggregate, Is.383 11 Infineness modulus, grading of aggregate, Is.383 11 Infineness modulus, grading of aggregate, Is.383 12 Infineness modulus, grading of aggregate, Is.383 13 Infineness modulus, grading of aggregate, Is.383 14 W4 Infinence of admixtures, Is.89103, accelerating admixtures	2	W1	1		
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6 W2 1 soundness of cement. 7 1 Types of Cement 8 1 Revision 9 3.1 Classification and characteristics of aggregate, 1 fineness modulus, grading of aggregate,I.S.383 1 3.2 Quality of water for mixing and curing. 1 3.3 Important functions, 1 classification of admixtures, I.S 9103, 1 accelerating admixtures	4		1	_	
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11 curing. 12 1 3.3 Important functions, 13 1 classification of admixtures, I.S 9103, 14 W4 1 accelerating admixtures	10	W3	1		
13 classification of admixtures, I.S 9103, 1 accelerating admixtures	11			curing.	
14 1 accelerating admixtures	12		1	3.3 Important functions,	
W4	13		1	classification of admixtures, I.S 9103,	
15 retarding admixtures	14	WA	1		
	15	VV -T	1	retarding admixtures	

16		1	water reducing admixtures	
17		1	air containing admixtures	
18		1	Revision	
19	W5	1	Properties of fresh concrete: 4.1 Concept of fresh concrete,	
20		1	workability, slump test, .	
21		1	compacting factor test,	
22	W6	1	V-bee consistency test and flow test,	
23	WO	1	requirement of workability,I.S.1199	
24		1	Revision	
25		1	6 Concrete mix Design 6.1 a) Introduction	
26	W7	1	b) Data or input required for mix design.	
27		1	6.2 Nominal mix concrete	
28		1	Design mix concrete.	
29		1	Revision	
30	W8	1	6.3 Basic consideration for concrete mix design, Methods of proportioning concrete mix – I.S Code method of mix design(I.S.10262)	
31	1	1	Practice on problems	
32	1	1	Practice on problems	
33		1	Practice on problems	
34	W9	1	Production of concrete: 7.1 Batching of materials,	
35		1	mixing of concrete materials,	
36		1	transportation, placing of concrete,	
37		1	compaction of concrete (vibrators),	

1	1			
38	W10	1	Curing of concrete, Formwork- requirements and types	
39		1	stripping of forms. (Concepts only)	
40		1	Revision	
41		1	Revision	
42		1	Inspection and Quality Control of Concrete 10.1 Quality control of Concrete as per I.S.456,	
43	W11	1	Factors causing the variations in the quality of concrete	
44		1	10.2 Mixing, Transporting, Placing &curing requirements of Concrete as per I.S.456.	
45		1	10.3 Inspection and Testing as per Clause 17 of IS:456.	
46	W12	1	10.4 Durability requirements of Concrete as per I.S:456.	
47		1	Special Concrete 11.1 Introduction to ready mix concrete,	
48		1	high performance concrete,	
49		1	silica fume concrete,	
50		1	shot-crete concrete or gunitting (Concepts only).	
51	W13	1	Deterioration of concrete and its prevention: 12.1 Types of deterioration,	
52		1	prevention of concrete deterioration,	
53		1	corrosion of reinforcement, effects and prevention	

54	W14	1	Repair technology for concrete structures: 13.1 Symptom, cause and prevention and remedy of defects during construction	
55		1	cracking of concrete due to different reasons.	
56		1	Repair of cracks for different purposes,	
57		1	selection of techniques	
58	W15	1	polymer based repairs	
59] W13	1	common types of repairs.	
60		1	Revision	
	Total 60			

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