

CBCS SCHEME

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18CV44

Fourth Semester B.E. Degree Examination, Jan./Feb. 2021
Concrete Technology

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. IS – 10262 : 2009 mix design code is allowed.

Module-1

- 1** a. Explain the manufacturing of cement by dry process with flow chart. (10 Marks)
 b. What is carbon foot print? Explain the process of reduce of carbon foot print in cement industry. (10 Marks)

OR

- 2** a. What is grading of aggregates? Explain the importance of size, shape and texture with respect to coarse aggregate. (10 Marks)
 b. Explain the application of Recycled concrete aggregate in making concrete. (10 Marks)

Module-2

- 3** a. Define water-cement ratio and how this water – cement ratio will have influence on workability of fresh concrete. (10 Marks)
 b. List the factors that effects workability of concrete? Mention the laboratory tests conducted to measure workability of a concrete. (10 Marks)

OR

- 4** a. Explain the detail procedure of manufacturing of concrete. (10 Marks)
 b. Explain : (10 Marks)
 i) Bleeding
 ii) Curing
 iii) Segregation
 iv) Shrinkage.

Module-3

- 5** a. What is non destructive test of concrete? Explain ultrasonic pulse velocity and rebound hammer test. (10 Marks)
 b. What is durability of concrete? Explain the significance and factor influencing durability. (10 Marks)

OR

- 6** a. Explain the process of carbonation, freezing and thawing in concrete. (10 Marks)
 b. Explain the factors influencing the strength of concrete. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
 2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

18CV44

Module-47 Design a concrete mix for M₃₅ grade using flyash.

a.	Type of cement	:	OPC 43 Grade
b.	Type of flyash	:	F Type
c.	Size of aggregate	:	20mm
d.	Minimum cement content	:	320 kg/m ³
e.	Maximum w/c ratio	:	0.45
f.	Workability	:	100mm slump
g.	Exposure condition	:	Severe (RCC)
h.	Method of placing concrete	:	Pumping
i.	Chemical admixture	:	Super plasticizer
j.	S.G of cement	:	3.15
k.	S.G of fly ash	:	2.2
l.	S.G of CA and FA	:	2.78 and 2.70
m.	Water absorption C.A	:	0.5%
	F.A	:	Nil
n.	Free surface moisture		
	C.A	:	Nil
	F.A	:	1.5%
o.	Fine aggregate zone	:	I

(20 Marks)

OR

8 Proportioning the concrete mix by IS method for the following data :

1	Grade of concrete	:	M ₄₀
2	Type of cement	:	OPC
3	SP. Gravity of cement	=	3.15
4	Maximum size of aggregates	:	20mm
5	Exposure condition	:	sever (RCC)
6	Degree of supervision	:	good
7	SP. Gravity of C.A	=	2.74
8	SP. Gravity of F.A	=	2.74
9	F.A confirmed to grading zone one of IS 383		
10	C.A confirming to IS 383		
	fraction I		60%
	fraction II		60%

(20 Marks)

Module-5

- 9 a. List and explain the any two tests conducted on self compacting concrete. (10 Marks)
 b. What are requirements of RMC? Briefly discuss advantages and disadvantages of RMC? (10 Marks)

OR

- 10 Explain the following :
 a. Fiber reinforced concrete
 b. Geo polymer concrete
 c. High strength concrete
 d. High performance concrete.

(20 Marks)

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