

2023
(DECEMBER)

CONCRETE TECHNOLOGY

Full Marks: 100

Pass Marks: 30

Time: Three hours

The figures in the margin indicate full marks for the questions.

Answer any five questions.

	Question body	Marks
1.	a) Define creep of concrete. What are the factors affect creep?	2+4=6
	b) Define grade of concrete? What are the various grades as per IS 456:2000?	2+4=6
	c) Write the process of manufacturing of Portland cement with neat sketch.	8
2.	a) Define admixture. What are the functions of admixtures? Classify the admixtures.	2+6+4=12
	b) Describe the procedure of production of concrete.	8
3.	a) Classify the aggregates based on various criteria.	12
	b) Describe the factors affecting workability.	8
4.	a) Determine the aggregate impact value from the following data Total weight of aggregate taken= 12 kg Weight of aggregate passing through 12.5 mm IS sieve and retained on 10 mm IS sieve = 7.2 kg Weight of aggregate passing through 2.36 mm IS sieve after testing= 2.48 kg	5
	b) Write a note on ready mix concrete (RMC)	7
	c) Describe segregation? Write the remedies of segregation.	4+4=8
5.	a) Describe durability? What are the factors affecting durability?	2+5=7
	b) Write short note on quick setting cement and Portland puzzolana cement.	4+4=8
	c) Sand of 500gm is taken for sieve analysis. The weight retained on the sieve 4.75 mm, 2.36 mm, 1.18 mm, 600 μ , 300 μ , 150 μ and 90 μ are 15 gm, 45 gm, 55 gm, 93 gm, 172 gm, 91 gm and 29 gm respectively. Determine the fineness modulus of the sand	5
6.	a) Define honey combing? Write down the remedies of honey combing?	5+5=10
	b) Define hydration of cement and heat of hydration?	2+2=4
	c) What are various oxides and their percent content present in cement?	3+3=6