Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025

Fourth Semester

Civil Engineering

CE3403 - Concrete Technology

(IS:10262-2019) Can be Permitted

Regulations - 2021

Duration : 3 Hrs ***Maximum : 100 Marks***

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

Q.No	*Questions*	*BLT*	*CO*	*Marks*
1.	Define hydration of cement.	L1	1	2
2.	What do you understand by grading of aggregate?	L1	1	2
3.	What is plasticizer?	L1	2	2
4.	Mention any few mineral admixtures used in concrete.	L1	2	2
5.	What is M25 grade concrete?	L1	3	2
6.	Differentiate nominal mix and design mix.	L2	3	2
7.	Differentiate segregation and bleeding.	L2	4	2
8.	Outline the characteristics of good concrete?	L2	4	2
9.	What is ferrocement?	L2	5	2
10.	Define Ready - mix concrete.	L1	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No			*Questions*	*BLT*	*CO*	*Marks*
11.	a	i	Write the chemical composition and application of 53 grade cement.	L3	1	6
		ii	Explain about two tests conducted on cement.	L3	1	10
			Or			
	b	i	How will you find crushing strength and impact strength of aggregate?	L3	1	10
		ii	Mention the characteristics of good aggregate.	L3	1	6
12.	a	i	Explain any two types of mineral admixtures added in the concrete.	L3	2	10
		ii	Discuss the role of mineral admixtures in the development of strength.	L3	2	6
			Or			
	b	i	Summarize the effect of retarders and accelerators in cement concrete and give examples of each.	L3	2	8
		i	Define super plasticizers. Explain the importance in modifying the	L3	2	8

		i	properties of concrete.			
13.	a		Design a concrete mix for M35 grade concrete for the following data by IS method. Exposure condition: severe, Specific gravity of ordinary Portland cement = 3.15, Specific gravity of fine aggregate (Zone II) = 2.65, Specific gravity of coarse aggregate = 2.70, Standard deviation = 4 N/mm^2, Dry rodded bulk density of coarse aggregate =1600kg/m^3, Fineness modulus =2.80, Slump =50mm, Size of coarse aggregate = 20mm, water absorption of coarse aggregate= 1%, Free surface moisture in sand = 2% . Assume any other data suitably, if necessary.	L4	3	16
			Or			
	b		Explain the procedure to design a concrete mix using BIS method.	L4	3	16
14.	a		Explain the tests used to measure workability of concrete.	L3	4	16
			Or			
	b	i	Describe any two tests to be conducted to determine the properties of hardened concrete.	L3	4	10
		ii	Draw the stress strain curve for concrete.	L3	4	6
15.	a	i	Identify the properties of fibre-reinforced concrete.	L3	5	6
		ii	Write short notes on High strength concrete and Ferrocement.	L3	5	10
			Or			
	b	i	Explain the procedure for manufacturing of lightweight aggregate concrete and its application.	L3	5	10
		ii	List the applications of Geopolymer concrete in construction sector.	L3	5	6