

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025***Fourth Semester**Civil Engineering**CE3403 - Concrete Technology***(IS 10262 :2019 & IS 456: 2000 are permitted)***Regulations - 2021**Duration : 3 Hrs**Maximum : 100 Marks***PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Name the major compounds of OPC and mention approximate percentage of each.	L1	1	2
2.	List the different types of tests conducted on coarse aggregate?	L1	1	2
3.	State the advantage and disadvantages of adding Super plasticizers in concrete?	L2	2	2
4.	What is the importance of water proofers added in cement concrete?	L2	2	2
5.	List the various methods of proportioning.	L1	3	2
6.	What are the factors affecting proportioning of concrete mixes?	L1	3	2
7.	Mention the values of different type of slump.	L2	4	2
8.	What are the methods are adopted for compacting the concrete?	L2	4	2
9.	Differentiate SIMCON and SIFCON.	L2	5	2
10.	List the methods of making light weight concrete.	L1	5	2

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

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i Write explanatory notes on the following: i. Uniform grading ii. Gap grading iii. Continuous grading	L2	1	8
	ii Explain any two methods of finding the abrasion value of a coarse aggregate.	L2	1	8
	Or			
	b Explain in details the different tests employed for cement to ascertain its quality as per IS specification.	L2	1	16
12.	a Explain the effect of concrete properties while adding silica fume and GGBS.	L2	2	16
	Or			
	b Differentiate between accelerators and retarders with suitable examples and else how you can determine dosage of admixtures.	L2	2	16

13.	a	Design a concrete mix for construction of an elevated water tank. The specified design strength of concrete is 30Mpa at 28 days measured on standard cylinders. Standard deviation can be taken as 4Mpa. The specific gravity of FA and CA are 2.65 and 2.7 respectively. The dry rodded bulk density of CA is 1600 kg/m ³ and fineness modulus of FA is 2.8. OPC used A slump of 50mm is necessary. CA is found to be absorptive to the extent of 1% and free surface moisture in sand is found to be 2%. Assume any other data.	L3	3	16
		Or			
	b	Design a M30 grade concrete with compaction factor of 0.9 by IS code method for moderate exposure and good quality control conditions using 20mm coarse aggregate which conforms to IS 380 grading. Specific gravity of cement, fine and coarse aggregates is 3.15, 2.65 and 2.60 respectively. Water absorption of CA and FA is 0.5% and 1.0% respectively. Natural moisture content and grading zone of FA are 1.0% and zone III respectively. Assume suitable data if found necessary.	L3	3	16
14.	a	Mention the various methods to ascertain the workability. Discuss any two of them in detail with neat sketch.	L2	4	16
		Or			
	b	Explain the procedure of compressive, tensile and flexural strength tests conducted on cement concrete elements with neat sketch.	L2	4	16
15.	a	Briefly explain self-compacting concrete. Discuss any two test used to ascertain the workability of self-compacting concrete in detail with neat sketch.	L2	5	16
		Or			
	b	Write short notes on the following: i. High strength concrete ii. Fibre reinforced concrete	L2	5	16