

Reg.No. \_\_\_\_\_



# Karunya UNIVERSITY

(Karunya Institute of Technology & Sciences)  
(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

## End Semester Examination – Nov/Dec – 2016

Code : **14CE2031**  
Sub. Name : **Concrete Technology**

Semester : **VII**  
Duration : **3hrs**  
Max. marks : **100**

### ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1	a.	List down the properties of ordinary Portland cement.	CO1	1 0
	b.	Explain in detail any two laboratory test on properties of cement.	CO1	1 0
(OR)				
2	a.	List the raw materials required for manufacturing Portland Cement and explain the salient features of its two process of manufacturing.	CO1	1 0
	b.	Write short notes on Hydration of cement	CO1	4
	c.	Write short notes on the parameters involved in deciding the W/C ratio.	CO1	6
3	a.	Explain in detail about the influence of aggregate on the properties of concrete.	CO1	8
	b.	What are all the effects of 'Accelerators' on the property of fresh concrete?	CO1	4
	c.	Explain the three types of pre-setting cracks in detail..	CO1	8
(OR)				
4.	a.	Write in detail about Deleterious substances in Aggregates and their effect on concrete properties	CO1	1 0
	b.	Explain in detail the physical and mechanical properties of aggregates and its effect on concrete.	CO1	1 0
(OR)				
5.	a.	What are all the factors affecting the workability of concrete and explain any two factors in detail how they are affecting?	CO1	1 0
	b.	Explain in detail about the action, advantage, application and effect of Super Plasticizer on flowing concrete.	CO1	1 0
(OR)				
6.	a.	Explain in detail about the types of 'Shrinkage in Concrete'	CO2	1 0
	b.	List out the various stages of manufacture of concrete in sequential order and explain any two stages in detail.	CO1	1 0
7.	a.	Define and explain the significance of Durability of concrete. And also list out the factors influencing the durability of concrete.	CO2	1 0
	b.	Write detailed report on Creep in concrete.(Definition, Influencing factors . Effect on concrete)	CO2	1 0
(OR)				
8.	a.	List the properties of hardened concrete. Explain any one factor in detail.	CO2	1 0
	b.	Write detailed report on Chemical action/attack on concrete and explain each attack.	CO2	1 0

		<b><u>Compulsory:</u></b>		
9.	a.	Explain the ACI method of mix design with an illustration problem.	CO3	1 4
	b.	Write about Non-Destructive testing of concrete	CO2	6

ALL THE BEST

**Course Outcome:**

Students at the end of the course will be able to:

CO1: Understand about concrete making materials, properties of fresh and hardened concrete.

CO 2: Apply the concepts of durability of concrete, special concretes and non-destructive testing of concrete.

CO3: Design the concrete mixes by various mix design methods.

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Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.	a.	List down the types of cement and explain their properties & uses	CO1	10
	b.	Explain in detail about the supplementary cementing materials with examples.	CO1	10
(OR)				
2.	a.	Discuss the different qualities of water used in concrete and List down the parameters involved in deciding the W/C ratio.	CO1	10
	c.	What are all the field test available to ascertain the quality of cement at site? Discuss in detail	CO1	10
3.	a.	What are all the classification of aggregates? Discuss in detail.	CO1	7
	b.	List down the effect of admixtures on hardened concrete properties	CO1	7
	c.	Write short notes on Alkali - Aggregate Reaction on concrete	CO1	3
	d.	Write short notes on Alkali – Silica Reaction	CO1	3
(OR)				
4	a.	List down the Effect of Air Entrainment admixtures addition, on the Properties of Concrete.	CO1	6
	b.	Write in detail about Deleterious substances in Aggregates and their effect on concrete properties	CO1	7
	c.	Explain the three types of pre-setting cracks in detail	CO1	7
5.	a.	Explain the procedure for conducting 'slump test' for finding the workability of concrete, with sketches	CO1	4
	b.	Explain in detail about the Shotcrete and its application	CO1	8
	c.	Compare Ready Mix concrete and Site Mix Concrete?	CO1	8
(OR)				
6.	a.	Demonstrate <b>any two tests</b> that are commonly employed to measure workability at site or lab.	CO2	6
	b.	What is the action of plasticizer in concrete and explain the mechanism involves?	CO2	8
	c.	List the type of Admixtures classified based on their function.	CO2	6
7.	a.	Discuss in detail about the Permeability of concrete including its causes and measures for reduction.	CO2	10
	b.	Explain the factors influencing the concrete strength test results.	CO2	10
(OR)				
8.	a.	What are all the factors affecting the Durability of concrete? Explain in detail.	CO2	10
	b.	Define Creep of concrete and explain the factors which are influencing it.	CO2	10

		<b><u>Compulsory:</u></b>		
9.	a.	Explain the IS method of mix design with an example.	CO3	1 4
	b.	Define Light weight concrete. Give detailed notes on its types.	CO2	6

ALL THE BEST

**Course Outcome:**

Students at the end of the course will be able to:

CO1: Understand about concrete making materials, properties of fresh and hardened concrete.

CO 2: Apply the concepts of durability of concrete, special concretes and non-destructive testing of concrete.

CO3: Design the concrete mixes by various mix design methods.