Q.P. Code: 16CE118 **R16**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year I Semester Regular & Supplementary Examinations Nov/Dec 2019

CONCRETE TECHNOLOGY

(Civil Engineering)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	**a**	What are the different types of mineral admixtures? Explain briefly.	**6M**
	b	Explain the advantages of admixtures in concrete making.	**6M**
		OR	
2	**a**	Discuss the difference between the wet and dry process of manufacturing of Portland cement and draw the flow diagrams for wet and dry process.	**8M**
	b	i)What is the function of gypsum in the manufacture of cement? ii) What is meant by fineness modulus?	**4M**

UNIT-II

3	**a**	Explain in detail the slump test with the help of a neat sketch. Discuss its merits and limitations.	**8M**
	b	What do you understand by the term Workability?	**4M**
		OR	
4	**a**	Explain the following with reference to the properties of fresh concrete. i) Segregation ii) Bleeding.	**8M**
	b	Explain the phenomenon of gain of strength of concrete with age.	**4M**

UNIT-III

5	**a**	Explain the procedure for UPV and Rebound hammer test.	**10M**
	b	Define Creep.	**2M**
		OR	
6	**a**	Draw the typical stress-strain curve of concrete and explain the various modulus of elasticity	**8M**
	b	What is shrinkage of concrete?	**4M**

UNIT-IV

7	**a**	Explain the mix design procedure of concrete as per IS code Method.	**9M**
	b	List out the usage of slump values.	**3M**
		OR	
8	**a**	Design a concrete mix of M20 grade for a roof slab. Take a standard deviation of 4MPa. The specific gravities of Coarse Aggregate and Fine Aggregate are 2.67 and 2.73 respectively. The bulk density of coarse aggregate is 16020 Kg/m3 and Fineness Modulus of Fine Aggregate is 2.76. A slump of 50mm is necessary. The water absorption of coarse aggregate is 1% and free moisture in fine aggregate is 3%. Design the concrete mix using ACI method. Assume any missing data suitably.	**9M**
	b	List out the requirements of fresh concrete.	**3M**

UNIT-V

9	**a**	What is self-consolidating concrete? What are the materials used for SCC?	**9M**
	b	List some of the artificial light weight aggregate.	**3M**
		OR	
10	**a**	Write the various applications of Fiber Reinforced concrete.	**8M**
	b	i) Define Admixtures. ii) List the different materials used for self-healing concrete.	**4M**

END