Q.P. Code: 16CE2001 **R16**

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

M.Tech I Year I Semester (R16) Regular Examinations December 2016

ADVANCED CONCRETE TECHNOLOGY

(Structural Engineering)

(For Students admitted in 2016 only)

Time: **3 hours** Max. Marks: **60**

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

UNIT –I

Q.1	a.	Explain about Rapid hardening cement.	5M
	b.	What do you mean by grading of aggregates ? Why is it necessary that the aggregates should be properly graded?	7M
		OR	
Q.2	a.	Write short notes on silica fume and fly ash	8M
	b.	Define super plasticizer. What are the uses of super-Plasticizers?	4M

UNIT –II

Q.3		Using IS method, design a concrete mix for the following data. Characteristic compressive strength = 30 N/mm^2 Maximum size of coarse aggregate = 20mm Specific gravity of coarse aggregate = 2.65 Dry density of coarse aggregate = 1550 Kg/m^3 Specific gravity of fine aggregate = 2.61 Sand confirming to grading Zone-III Workability required = 0.85 C.F. Assume missing data suitably	12M
		OR	
Q.4	a.	Explain in detail about high strength concrete.	6M
	b.	Explain in detail about the mix design procedure of Road note No.4 method.	6M

UNIT –III

Q.5	a.	List out the various tests to be performed to measure the workability of fresh concrete and explain any one method with a sketch.	7M
	b.	List out the methods used for transportation of concrete and explain any one method.	5M
		OR	
Q.6	a.	Define shrinkage and explain the factors effecting shrinkage of concrete.	6M
	b.	List and explain various factors effecting the strength of concrete.	6M

UNIT –IV

Q.7	a.	Explain with a neat sketch the Schmidt's Rebound hammer test.	6M
	b.	Define durability and explain the effect of water cement ratio on durability.	6M
		OR	
Q.8	a.	Define carbonation and explain the factors influencing Rate of carbonation.	6M
	b.	Briefly explain about the vibration method of non-destructive testing of concrete.	6M

UNIT –V

Q.9	a.	Explain the factors effecting properties of Fibre reinforced concrete.	6M
	b.	Explain polymer cement concrete.	6M
		OR	
Q.10	a.	Explain about light weight concrete.	6M
	b.	Define Ready mixed concrete and what are its advantages over conventional concrete?	6M