Q.P. Code: 16EC429 **R16**

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech IV Year I Semester Regular Examinations Nov/Dec 2019

EMBEDDED SYSTEMS

(ECE)

Time: 3 hours Max. Marks: 60

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

UNIT-I

1	**a**	Define Embedded System. Classify different types of embedded systems.	**8M**
	b	Mention typical features of embedded systems.	**4M**
		OR	
2	**a**	Mention various applications of Embedded System.	**6M**
	b	Write short notes on : i)Timers ii)Clocks iii)Address bus & Data bus	**6M**

UNIT-II

3		Describe RISC & CISC design philosophy in detail.	**12M**
		OR	
4	**a**	Write short notes on: i) Brownout protection ii) Real Time Clock.	**4M**
	b	Explain in brief about the following communication interfaces. i) Parallel Interface ii) RS-232 & RS-485	**8M**

UNIT-III

5	**a**	List out the features of ATMega328/P Microcontroller.	**6M**
	b	What is Serial port? Explain about the Serial port in ATMega328/P µC.	**6M**
		OR	
6		Define PWM. Explain how PWM signals are generated in ATMega328/P µC.	**12M**

UNIT-IV

7	**a**	Explain about the Arduino programming control structures with an example.	**8M**
	b	Explain about the arithmetic operators with an example.	**4M**
		OR	
8	**a**	Write a Arduino program to display digital sensor value in serial monitor.	**6M**
	b	Write a Arduino program to display “Hello world” value in LCD.	**6M**

UNIT-V

9	**a**	Define IoT.Mention the applications of IoT.	**6M**
	b	Explain the following: i) TCP and UDP ports ii) MAC address	**6M**
		OR	
10		Design and explain the solution for water tank overflow using IoT.	**12M**

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