Q.P. Code: 19EC0427 **R19**

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech IV Year I Semester Regular Examinations November/December-2022

EMBEDDED SYSTEMS AND IoT

(Electronics and Communication Engineering)

Time: 3 hours Max. Marks: 60

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

UNIT-I

1	a	Distinguish between Von-Neumann and Harvard architecture.	L2	6M
	b	Write a short note about the following software tools in an embedded system i) Cross-assembler ii) IDE iii) Prototyper	L1	6M
		OR		
2	a	Explain the role of following circuitry in embedded system i)Reset Circuit ii) Real Time Clock iii) Watchdog Timer	L2	12M

UNIT-II

3	a	Describe the implementation of IoT technology into distributed energy systems to optimize the efficiency of energy infrastructure and reduce wastage in the following categories: (i)Smart grids (ii) Renewable energy systems (iii)Prognostics	L2	8M
	b	Describe the implementation of IoT technology in Health and life style as health and fitness monitoring	L2	4M
		OR		
4	a	With the help of following sectors explain how IoT technology is impacting on the agriculture sector: (i) Smart Irrigation (ii) Green house control	L2	6M
	b	With a neat sketch, explain the Logical Design of an IoT.	L3	6M

UNIT-III

5		With the help of neat diagrams, explain the M2M system architecture.	L2	12M
		OR		
6	a	Write a program to perform ADC with the sensor inputs	L3	6M
	b	What is Arduino and list its advantages?	L2	6M

UNIT-IV

7	a	Explain the following data types and data structures of python with an example. i) Numbers ii) Strings iii)Tuples iv)Dictionaries	L2	8M
	b	Explain Functions and Modules in python with an example.	L2	4M
		OR		
8	a	Explain the characteristics of Python programming language	L2	6M
	b	Write a short on various service types used in service specifications step of IoT System design methodology.	L2	6M

UNIT-V

9	a	Describe the various features of a Raspberry Pi board.	L2	6M
	b	Explain the GPIO pins of Raspberry Pi device with neat diagram.	L2	6M
		OR		
10		Design and Development of an automatic refrigerator light system with LED, switch & raspberry pi and write a python program to support the working of that design.	L3	12M

***** END *****

278