O.P.Code: 20EC0422	R20	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech III Year II Semester Regular Examinations August-2023

EMBEDDED SYSTEMS AND IoT
(Electronics & Communication Engineering)

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

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

UNIT-I

1	a	With a neat diagram, explain the design process of an embedded system.	CO1	L2	6M
	b	Explain the RS-232 and RS-485 interfaces in embedded systems.	CO1	L2	6M
		OR			
2	a	Define embedded system and Write any four important characteristics of embedded systems.	CO1	L1	6M
	b	Distinguish between Von-Neumann and Harvard architecture.	CO1	L2	6M

UNIT-II

3	a	Explain in brief IoT applications.	CO2	L2	6M
	b	Compare the protocols associated with transport layer of IoT.	CO2	L2	6M
		OR			
4	a	Illustrate the Physical design with an generic block diagram of an IoT device and explain it briefly.	CO2	L2	6M
	b	Describe the implementation of IoT technology in Health and life style as health and fitness monitoring.	CO2	L2	6M

UNIT-III

5	a	Develop a program to control DC motor using PWM technique.	CO3	L3	6M
	b	Write a program for Arduino to work as a Timer.	CO3	L3	6M
		OR			
6	a	What are the software structure functions in Arduino?	CO3	L1	6M
	b	Draw the structure of Software defined networking for IoT & Explain it.	CO3	L2	6M

UNIT-IV

7		Describe the following steps involved in IoT system design methodology: (i) Purpose & Requirements Specification (ii) Process Specification	CO4	L2	12M
		OR			
8	a	Describe the packages used in python.	CO4	L2	6M
	b	Distinguish between procedure-oriented programming and object-oriented programming.	CO4	L2	6M

UNIT-V

9		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.	CO5	L6	12M
		OR			
10	a	Illustrate how to interface a switch to raspberry pi.	CO5	L3	6M
	b	Mention the flavors of Linux OS supported by Raspberry pi device.	CO5	L1	6M

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