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

B.Tech IV Year I Semester Regular & Supplementary Examinations Feb-2021
EMBEDDED SYSTEMS

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 60

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

UNIT-I

- 1 a Differentiate SRAM & DRAM. 4M
b Explain the various purposes of embedded systems in detail with examples. 8M

OR

- 2 a List typical features of embedded systems. 4M
b Write a short note about the following software tools in an embedded system i) Cross-assembler ii) IDE iii) Prototyper iv) Linker 8M

UNIT-II

- 3 a What is Actuator? Explain the role of an actuator in embedded system design. 3M
b With a neat sketch, describe the principle of operation of the following devices i) Stepper Motor ii) Relay 9M

OR

- 4 a Compare the operation of Zigbee and Wi-Fi network. 6M
b List the merits and limitations of IEEE1394 interface over USB. 6M

UNIT-III

- 5 a With the help of neat block diagram, describe the structure of Arduino UNO board. 8M
b Explain in brief about the Arduino platform. 4M

OR

- 6 a Define Interrupt. 2M
b Explain about internal and external interrupts of ATmega328/P μ C. 10M

UNIT-IV

- 7 a Explain about the Arduino programming control structures with an example. 8M
b Explain about the comparison operators with an example. 4M

OR

- 8 a Write an Arduino program to display digital sensor value in serial monitor. 6M
b Write an Arduino program to display "Hello world" value in LCD 6M

UNIT-V

- 9 a Define IoT 2M
b Explain the following 10M
i) TCP and UDP ports ii) MAC address

OR

- 10 a With necessary diagrams, explain how Machine to Machine applications exchange data in operated in constrained devices and constrained networks using CoAP protocol. 8M
b Explain the following terms 4M
(i) DNS (ii) DHCP

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