

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year II Semester Regular Examinations August-2023

ELEMENTS OF EMBEDDED SYSTEMS
(Open Elective - II)

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

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

UNIT-I

- 1 a Define embedded system and List the various processors types of embedded processors. CO1 L1 6M
b Briefly discuss the major application of Embedded systems. CO1 L2 6M

OR

- 2 a Explain the classification of Embedded systems based on Performance and Functional Requirements. CO1 L2 6M
b Explain in brief about the programming languages used for the development of Embedded systems. CO1 L2 6M

UNIT-II

- 3 a Define sensor and Actuator and examples for each. CO4 L1 6M
b Explain the different classification of Program Storage Memory CO2 L1 6M

OR

- 4 a Distinguish between RISC and CISC design. CO2 L1 6M
b Explain the role of following circuitry in embedded system. CO2 L2 6M
i) Watchdog Timer ii) Embedded Firmware

UNIT-III

- 5 a Explain the concept of RS485 communication Interface CO3 L2 6M
b With a neat sketch explain UART communication interfaces. CO2 L3 6M

OR

- 6 a Explain in detail about the USB and its types of data transfer CO3 L2 6M
b Explain the features of Bluetooth. CO3 L2 6M

UNIT-IV

- 7 a What are the features of Arduino Uno platform? CO3 L1 6M
b Explain with a neat sketch the pin diagram of Arduino ATMege328 CO3 L2 6M

OR

- 8 a Write a program for LCD and Keyboard programming interface for an Arduino. CO4 L2 6M
b Write a suitable program to interface Stepper motor with Arduino processor. CO4 L2 6M

UNIT-V

- 9 a What is IoT and explain its characteristics? CO5 L1 6M
b Compare the TCP and UDP protocols associated with transport layer of IoT. CO5 L2 6M

OR

- 10 a Briefly discuss the MQTT, XMPP and CoAP protocols in application layer. CO5 L2 6M
b Explain how IoT technology can used in the following application areas: CO6 L2 6M
(i)Surveillance (ii)Weather monitoring

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