

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

B.Tech. III Year II Semester Regular & Supplementary Examinations June-2025
ELEMENTS OF EMBEDDED SYSTEMS

(Open Elective-II)

Time: 3 Hours

Max. Marks: 60

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

UNIT-I

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|---|---|--|-----|----|----|
| 1 | a | Define embedded system and List the various processors types of embedded processors. | CO1 | L1 | 6M |
| | b | Explain the classification of Embedded systems based on Deterministic Behavior and Triggering. | CO1 | L2 | 6M |

OR

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|---|---|--|-----|----|----|
| 2 | a | List the applications of Embedded systems. | CO1 | L2 | 6M |
| | b | Compare between RAM and ROM memory. | CO1 | L2 | 6M |

UNIT-II

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|---|---|--|-----|----|----|
| 3 | a | Elaborate the classification of working RAM. | CO2 | L2 | 6M |
| | b | Compare between static RAM and Dynamic RAM.. | CO2 | L2 | 6M |

OR

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|---|---|---|-----|----|----|
| 4 | a | Explain the working principle of Photo diode. | CO2 | L1 | 6M |
| | b | Explain the role of following circuitry in embedded system.
i) Reset Circuit ii) Real Time Clock. | CO2 | L2 | 6M |

UNIT-III

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|---|---|---|-----|----|----|
| 5 | a | Explain the concept of I2C in Detail. | CO3 | L1 | 6M |
| | b | Discuss the Parallel interface with suitable diagram. | CO3 | L2 | 6M |

OR

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|---|---|--|-----|----|----|
| 6 | a | Discuss the concept of Zigbee module. | CO3 | L2 | 6M |
| | b | Explain the features of Wi-Fi network. | CO3 | L2 | 6M |

UNIT-IV

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|---|---|--|-----|----|----|
| 7 | a | Explain with a neat sketch the pin diagram of Arduino ATMege328. | CO4 | L2 | 6M |
| | b | Explain the the software structure functions in Arduino programming. | CO4 | L1 | 6M |

OR

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|---|--|---|-----|----|-----|
| 8 | | Write a suitable program to interface temperature sensor using Arduino UNO. | CO4 | L2 | 12M |
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UNIT-V

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|---|---|--|-----|----|----|
| 9 | a | What is an IP addresses and explain its working. | CO5 | L1 | 6M |
| | b | Discuss about HTTP and Websocket protocols. | CO5 | L2 | 6M |

OR

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|----|---|---|-----|----|----|
| 10 | a | Compare the TCP and UDP protocols with transport layer of IoT. | CO5 | L1 | 6M |
| | b | Explain how IoT technology can used in the Structural health monitoring application area. | CO5 | L2 | 6M |

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