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

B.Tech IV Year I Semester Regular Examinations February-2022

EMBEDDED SYSTEMS AND IoT

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 60

PART-A

(Answer all the Questions 5 x 2 = 10 Marks)

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|-----|--|----|----|
| 1 a | List the four important characteristics of embedded systems. | L1 | 2M |
| b | Compare TCP and UDP. | L4 | 2M |
| c | Define Thermocouple. | L2 | 2M |
| d | List the statements in Python. | L1 | 2M |
| e | What is the use of GPIO pins in a IoT device? | L2 | 2M |

PART-B

(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

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|-----|---|----|----|
| 2 a | Compare between RISC and CISC design. | L1 | 5M |
| b | Explain the role of following in embedded system
i) Oscillator ii) Brownout Protection | L2 | 5M |

OR

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|-----|--|----|----|
| 3 a | List various applications of embedded systems. | L2 | 5M |
| b | Explain the architecture of embedded system. | L2 | 5M |

UNIT-II

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|-----|--------------------------------------|----|----|
| 4 a | Describe the characteristics of IoT. | L2 | 5M |
| b | List the applications of IoT. | L1 | 5M |

OR

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|-----|--|----|----|
| 5 a | Sketch and explain the push-pull communication model of IoT. | L2 | 5M |
| b | Compare the protocols associated with transport layer of IoT | L2 | 5M |

UNIT-III

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|-----|---|----|----|
| 6 a | Explain the key elements of Network function Virtualization for IoT. | L2 | 5M |
| b | Define how the IoT technology can be implemented in smart lightening and intrusion detection systems. | L2 | 5M |

OR

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|-----|--|----|----|
| 7 a | Explain how IoT technology can used in the following application areas:
(i)Emergency response (ii) Weather monitoring | L2 | 6M |
| b | Explain the Key elements of Software defined network for IoT. | L2 | 4M |

UNIT-IV

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|-----|--|----|----|
| 8 a | List out the various steps involved in IoT system design methodology. | L1 | 6M |
| b | Describe the following steps involved in IoT system design methodology:
(i) Information model Specification (ii) Service Specifications | L2 | 4M |

OR

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|-----|---|----|----|
| 9 a | Compare between procedure-oriented programming and object-oriented programming. | L2 | 5M |
| b | Explain the Tuples data types of python with an example. | L2 | 5M |

UNIT-V

- 10 a Explain an IoT device & give some examples. L2 5M
- b Classify the various frequently used commands during operation of Linux OS. L1 5M

OR

- a Illustrate how to interface a LED to raspberry pi and write a program to blink L6 5M
- 11 b Explain the GPIO pins of Raspberry Pi device with neat diagram. L2 5M

END