****

**Presidency University**

**Bengaluru**

**School Of Computer Science and Engineering & Information Science**

**Summer Term End-Term Examinations, Aug 2024**

**Date**: 6 AUG 2024

**Time**: 1:00 PM TO 4:00PM

**Max Marks**: 100

**Weightage**: 50%

**Odd Semester**: 2023 - 24

**Course Code**: CSE3055

**Course Name**: WIRELESS COMMUNICATION IN IOT

**Department: CSE**

**Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any matter on the question paper other than roll number.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q No** | **Questions** | **marks** | **CO** | **RBT** |
| 1 | 1. Explain the characteristics, constraints and challenges of WSN. | 4 | CO1 | L1 |
| 1. Compare the Sensor, Sensor Node and Sensor architecture networks. | 6 | CO1 | L2 |
| 1. Write the Advantages ,Disadvantage and its Application of wireless sensor networks | 10 | CO1 | L3 |

OR

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2 | 1. Write the concept of energy scavenging with example | 4 | CO1 | L1 |
| 1. Discuss briefly the various hardware components used in Single node architecture of WSN | 6 | CO1 | L2 |
| 1. Write a note on enabling technologies for wireless sensor networks. | 10 | CO1 | L3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3 | 1. Brief about TinyOS and NesC and Illustrate the concept of interface to operating system with neat diagram | 4 | CO2 | L1 |
| 1. List the optimization goals of a WSN and figures of merit & explain each of the following | 6 | CO2 | L2 |
| 1. High-level QoS attributes in WSN highly depend on the applications, List the applications with the explanation for each application | 10 | CO2 | L3 |

OR

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4 | 1. Mention the need for Gateways and How tunneling helps in connecting two different networks | 4 | CO2 | L1 |
| 1. With neat diagram explain the various scenarios of Sensor Networks | 6 | CO2 | L2 |
| 1. Explain about Network Lifetime in detailed manner and Write a note on Robustness | 10 | CO2 | L3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5 | 1. Describe briefly the address and name management in WSN. | 4 | CO3 | L1 |
| 1. Elaborate about MAC protocols for WSN in detail. | 6 | CO3 | L2 |
| 1. Explain how the four layered generated stack for the network and physical layer is designed during internet communication with a neat diagram. | 10 | CO3 | L3 |

OR

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6 | 1. Give the advantages of SMAC protocol. | 4 | CO3 | L1 |
| 1. What is data processing? Also mention about the data processing cycle in IoT. | 6 | CO3 | L2 |
| 1. Describe the MQTT protocol in detail and write about MQTT topics and communication. Explain the working with an example. | 10 | CO3 | L3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 7 | 1. Discuss in detail about Radio Frequency Identification (RFID) | 4 | CO4 | L1 |
| 1. Explain about Bluetooth technology. | 6 | CO4 | L2 |
| 1. Elaborate about the following technologies-   (a)Wi-Fi (b)Infrared (IR) | 10 | CO4 | L3 |

OR

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8 | 1. Show how infrared can be used with applicatons | 4 | CO4 | L1 |
| 1. List down the features and characteristics of the Zigbee protocol. | 6 | CO4 | L2 |
| 1. Explain the IEEE 802.15.4 standard used for Wireless Personal Area Network and its correlation with Zigbee. | 10 | CO4 | L3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 9 | 1. What are the Factors Influencing WSN Design | 4 | CO1 | L1 |
| 1. Define wireless Sensor network? and neat diagram about energy consumption in WSN | 6 | CO1 | L2 |
| 1. What are the Mechanisms that will form typical parts of WSN ?Explain any two | 10 | CO1 | L3 |

OR

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 10 | 1. Write a short note on Gateway Concepts and With a help on neat diagram explain in detail about WSN tunnelling | 4 | CO2 | L1 |
| 1. Discuss in detail the characteristics and structure of Transceivers | 6 | CO2 | L2 |
| 1. Elaborate about the design principles of WSN and List the various aspects of Energy efficiency | 10 | CO2 | L3 |