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**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.*

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| **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

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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| 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

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| 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 |