*U.S.N* | | | | | | | | | |

# P.E.S. College of Engineering, Mandya - 571 401
### *(An Autonomous Institution affiliated to VTU, Belagavi)*
### Sixth Semester, B.E. - Information Science and Engineering
### Semester End Examination; August - 2023
### Internet of Things

*Time: 3 hrs*                                                                                     *Max. Marks: 100*

### *Course Outcomes*

The Students will be able to:

CO1: Able to identify the basic concepts, the different levels of IOT applications from a present and a futuristic view point.

CO2: Understand the practical knowledge through different case studies and develop multiple node IOT system with YANG network Configuration

CO3: Understand the working knowledge related to enabling technologies like RFID.

CO4: Design a methodology for various IOT applications and Model the Internet of things to business.

CO5: Understand data sets received through IoT devices and tools used for analysis.

<u>*Note:*</u>  **I) PART - A** is compulsory. **Two** marks for each question.

   **II) PART - B**: Answer any <u>**Two**</u> sub questions (from a, b, c) for a Maximum of **18 marks** from each unit.

| Q. No. | Questions | Marks | BLs | COs | POs |
|---|---|---|---|---|---|
| | **I : PART - A** | **10** | | | |
| 1 a. | List the characteristics of IOT. | 2 | L2 | CO1 | PO1 |
| b. | Explain any two needs for IOT system management. | 2 | L2 | CO2 | PO1 |
| c. | Define access control in RFID. | 2 | L2 | CO3 | PO1 |
| d. | Discuss the key concept of WAMP. | 2 | L2 | CO4 | PO1 |
| e. | List out the key processes of Hadoop. | 2 | L2 | CO5 | PO1 |
| | **II : PART - B** | **90** | | | |
| | **UNIT - I** | **18** | | | |
| 2 a. | Explain the detail General block diagram of an IOT. | 9 | L2 | CO1 | PO1 |
| b. | Outline the different IOT communication Models in detail. | 9 | L2 | CO1 | PO1 |
| c. | Compare and contrast IOT and M2M. | 9 | L2 | CO1 | PO1 |
| | **UNIT - II** | **18** | | | |
| 3 a. | List and explain any three home automation applications in detail. | 9 | L2 | CO2 | PO1 |
| b. | Describe the need for IOT system management. | 9 | L2 | CO2 | PO1 |
| c. | Write a note on; | | | | |
| | i) NETCONF | 9 | L2 | CO2 | PO1 |
| | ii) YANG | | | | |
| | **UNIT - III** | **18** | | | |
| 4 a. | Describe the RFID Middleware Architecture in detail. | 9 | L2 | CO3 | PO1 |
| b. | Outline the Hardware issue of RFID. | 9 | L2 | CO3 | PO1,2 |
| c. | Summarize the various applications of RFID. | 9 | L2 | CO3 | PO1 |

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| **UNIT - IV** | **18** | | | |

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| 5 a. | Illustrate a case study for home automation IOT system involving design methodology. | 9 | L3 | CO4 | PO1,3 |
| b. | Write a note on; | | | | |
| | i) Amazon S3 | 9 | L2 | CO4 | PO1 |
| | ii) Amazon DynamoDB | | | | |
| c. | Construct the steps in designing a RESTFUL web API. | 9 | L2 | CO4 | PO1 |

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| **UNIT - V** | **18** | | | |

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| 6 a. | With a neat diagram, explain the data flow in Map Reduce. | 9 | L3 | CO5 | PO1 |
| b. | Discuss briefly the components of Hadoop YARN. | 9 | L2 | CO5 | PO1 |
| c. | With a neat diagram, explain the components of spark cluster. | 9 | L2 | CO5 | PO1 |

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