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| **University of Kerala** | | |
| Discipline: Electronics |  | Time: 1 Hour 30 Minutes (90 Mins.) |
| Course Code: UK1MDCELE101 |  | Total Marks: 42 |
| Course Title: Basics of IoT |  |  |
| Type of Course: MDC |  |  |
| Semester: 1 |  |  |
| Academic Level: 100-199 |  |  |
| Total Credit: 3, Theory: 3 Credit  (Applicable for 4 Credit Course with 1 Credit Practical Also) |  |  |

Part A. 6 Marks. Time: 6 Minutes

Objective Type. 1 Mark Each. Answer All Questions (Cognitive Level: Remember/Understand)

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| **Qn.**  **No.** | **Question** | **Cognitive**  **Level** | **Course Outcome (CO)** |
| 1. | Define the Internet of Things (IoT). | Remember | CO-1 |
| 2. | Name a common IoT application in the healthcare sector | Remember | CO-1 |
| 3. | Which layer is responsible for physical communication between devices? | Understand | CO-1 |
| 4. | Identify a key characteristic that distinguishes IoT from M2M | Understand | CO-2 |
| 5. | Discuss an application of MEMS | Understand | CO-3 |
| 6. | How many digital pins are available on an Ardunio UNO board. | Understand | CO-4 |

Part B. 8 Marks. Time: 24 Minutes

Short Answer. 2 Marks Each. Answer All Questions (Cognitive Level: Understand/Apply)

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| **Qn.**  **No.** | **Question** | **Cognitive Level** | **Course Outcome (CO)** |
| 7. | Discuss the significance of digitization in the context of IoT? | Understand | CO-1 |
| 8. | Discuss how M2M differ from traditional human to machine interaction. | Understand | CO-2 |
| 9. | Demonstrate the concept of a wireless sensor networks | Apply | CO-3 |
| 10. | Identify the advantages of using Intel Galileo. | Apply | CO-4 |

Part C. 28 Marks. Time: 60 Minutes

Long Answer. 7 marks each. Answer all 4 Questions, choosing among options within each question.

(Cognitive Level: Apply/Analyse/Evaluate/Create)

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| **Qn.**  **No.** | **Question** | **Cognitive**  **Level** | **Course Outcome (CO)** |
| 11. | 1. Illustrate the simplified IoT architecture with appropriate diagram   OR   1. Using a neat figure explain the connectivity layers of IoT | Apply | CO-1 |
| 12. | 1. Examine the basic differences between M2M communication and IoT.   OR   1. Outline various M2M standards | Analyze | CO-2 |
| 13. | 1. Review the principles and applications of different types of sensors   OR   1. Describe the wireless sensor network | Evaluate | CO-3 |
| 14. | 1. Elaborate the suitability of Arduino UNO for specific applications like Robotics, IoT or Home Automation   OR   1. Summarize the basic architecture of Raspberry Pi | Create | CO-4 |

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| **Cognitive Level** | **Marks** | **Percentage** |
| Remember | 2 | 4.8 |
| Understand | 8 | 19.0 |
| Apply | 11 | 26.2 |
| Analyse | 7 | 16.7 |
| Evaluate | 7 | 16.7 |
| Create | 7 | 16.7 |
| **TOTAL** | **42** | **100** |

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| **Course Outcomes** | **Marks** | **Percentage** |
| CO-1 | 12 | 28.57 |
| CO-2 | 10 | 23.81 |
| CO-3 | 10 | 23.81 |
| CO-4 | 10 | 23.81 |
| **TOTAL** | **42** | **100** |