|  |  |  |
| --- | --- | --- |
| **University of Kerala** | | |
| Discipline: Electronics |  | Time: 1Hour 30 Minutes (90Mins.) |
| Course Code: UK1DSCELE101 |  | Total Marks: 42 |
| Course Title: Basic Electronic Technology |  |  |
| Type of Course : DSC |  |  |
| Semester:1 |  |  |
| Academic Level: 100-199 |  |  |
| Total Credit: 3 Theory : 3 Credit  (Applicable for 4 Credit Course with 1 Credit Practicals Also ) |  |  |

Part A. 6 Marks. Time: 6 Minutes

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Qn.**  **No.** | **Question** | **Cognitive**  **Level** | **Course Outcome(CO)** |
| 1. | Define IoT? | Remember | CO -1 |
| 2. | Define LED? | Remember | CO-2 |
| 3. | Explain the K Map? | Understand | CO-4 |
| 4. | Explain the binary number? | Understand | CO-3 |
| 5. | Compare SOP &POS? | Understand | CO-4 |
| 6. | Show the schematic symbol of Zener diode? | Understand | CO-2 |

Part B.8 Marks. Time: 24 Minutes

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Qn.**  **No.** | **Question** | **Cognitive Level** | **Course Outcome(CO)** |
| 7. | Explain De-Morgan’s Theorem? | Understand | CO-4 |
| 8. | Summarize the Zener diode as voltage regulator? | Understand | CO-2 |
| 9. | Explain the hexadecimal to binary conversion using suitable example? | Apply | CO-3 |
| 10. | Construct a diagram and explain the working of a light emitting diode (LED). | Apply | CO-2 |

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)

|  |  |  |  |
| --- | --- | --- | --- |
| **Qn.**  **No.** | **Question** | **Cognitive**  **Level** | **Course Outcome(CO)** |
| 11. | Explain various laws of Boolean algebra?  OR  Demonstrate the simplification of Boolean expressions using Karnaugh Maps (K-Maps) and Boolean algebra with an example. | Apply | CO-4 |
| 12. | Analyze the concept of Excess-3 codes, explaining how they work, and the process of converting between Excess-3 codes and other binary or decimal systems?  OR  Analyze the concept of Gray codes, explaining how they work, and the process of converting between Gray codes and other binary or decimal systems | Analyze | CO-4 |
| 13. | Explain the different number systems and their conversions?  OR  Describe the one’s and two’s compliment representation of binary numbers? | Evaluate | CO-3 |
| 14. | Explain the working principle and V-I characteristics of PN Junction diode?  OR  Explain the working principle of Zener diode with their forward and reverse bias conditions? | Create | CO-2 |

|  |  |  |
| --- | --- | --- |
| **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** |

|  |  |  |
| --- | --- | --- |
| **Course Outcomes** | **Marks** | **Percentage** |
|  |  |  |
| CO-1 | 1 | 2.38 |
| CO-2 | 13 | 30.95 |
| CO-3 | 10 | 23.8 |
| CO-4 | 18 | 42.85 |
|  |  |  |
| **TOTAL** | **42** | **100** |