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| **University of Kerala** | | |
| Discipline: Electronics |  | Time: 2 Hours (120 Mins.) |
| Course Code: UK1DSCELE102 |  | Total Marks: 56 |
| Course Title: Electronics Fundamentals |  |  |
| Type of Course: DSC |  |  |
| Semester: 1 |  |  |
| Academic Level: 100-199 |  |  |
| Total Credit: 4, Theory: 4 Credit, Practical: 0 Credit |  |  |

Part A. 6 Marks. Time: 5 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. | List the terminals of a transistor | Remember | CO3 |
| 2. | Show the symbol of an LED | Remember | CO2 |
| 3. | Ripple factor of a half wave rectifier is \_\_\_\_\_\_ | Understand | CO4 |
| 4. | Name one application of virtual reality | Understand | CO1 |
| 5. | \_\_\_\_is the most lightly doped section of a transistor | Understand | CO3 |
| 6. | Name an active component | Understand | CO3 |

Part B. 10 Marks. Time: 20 Minutes

Two-Three sentences. 2 Marks Each. Answer All Questions (Cognitive Level: Understand/Apply)

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| --- | --- | --- | --- |
| **Qn.**  **No.** | **Question** | **Cognitive**  **Level** | **Course**  **Outcome (CO)** |
| 7. | What is the function of emitter in a transistor | Understand | CO3 |
| 8. | What is augmented reality in electronic technology? | Understand | CO1 |
| 9. | Show the symbol and structure of semiconductor diode | Apply | CO2 |
| 10. | Show the input and output waveforms of a transistor | Apply | CO3 |
| 11. | Define PIV | Apply | CO4 |

Part C. 16 Marks. Time: 35 Minutes

Short Answer. 4 Marks Each. Answer all 4 questions, choosing among options within each question. (Cognitive Level: Apply/Analyse)

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| Qn.  No. | Question | Cognitive  Level | Course Outcome (CO) |
| 12. | a) Organize the concept of virtual reality  OR  b) Identify the applications of AI in modern technology | Apply | CO1 |
| 13. | a) With diagram explain the working of an LED  OR  b) Identify the types of semiconductors | Apply | CO2 |
| 14. | a) Examine the working of NPN transistor  OR  b) Distinguish the two types of FET with suitable diagram | Analyse | CO3 |
| 15. | a) Analyze briefly on rectifiers  OR  b) Examine positive clamper | Analyse | CO4 |

Part D. 24 Marks. Time: 60 Minutes

Long Answer. 6 Marks Each. Answer all 4 questions, choosing among options within each question. (Cognitive Level: Analyse/Evaluate/Create)

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| **Qn.**  **No.** | **Question** | **Cognitive**  **Level** | **Course Outcome (CO)** |
| 16. | a) Analyze the concept of biometrics in the field of electronics  OR  b) Distinguish augmented reality and virtual reality concepts | Analyse | CO1 |
| 17. | a) Explain the working principle of a reverse biased p-n junction diode.  OR  b) Explain the working principle of PN junction diode with no external bias | Evaluate | CO2 |
| 18. | a) Explain the working of a transistor as a switch.  OR  b) Compare NPN and PNP transistor | Evaluate | CO3 |
| 19. | a)Explain the different types of clipping circuits  OR  b)Explain the working principle of Full wave rectifier. | Create | CO4 |

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| **Cognitive Level** | **Marks** | **Percentage** |
| Remember | 2 | 3.6 |
| Understand | 8 | 14.3 |
| Apply | 14 | 25.0 |
| Analyse | 14 | 25.0 |
| Evaluate | 12 | 21.4 |
| Create | 6 | 10.7 |
| **TOTAL** | **56** | **100** |

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| **Course Outcomes** | **Marks** | **Percentage** |
| CO1 | 13 | 23 |
| CO2 | 17 | 31 |
| CO3 | 13 | 23 |
| CO4 | 13 | 23 |
|  |  |  |
|  |  |  |
| **TOTAL** | **56** | **100** |