Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **19EC1003** | **Duration :** | **3hrs** |
| **Sub. Name :** | **BASIC PRINCIPLES OF ELECTRICAL AND ELECTRONICS ENGINEERING** | **Max. Marks :** | **100** |

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| **Q. No.** | **Questions** | **Course Outcome** | **Marks** |
| **PART – A (10 X 1 = 10 MARKS)** | | | |
| 1. | List the types of energy meters. | CO1 | 1 |
| 2. | Find the resistance of a 230V, 100W incandescent lamp. | CO1 | 1 |
| 3. | State any two applications of stepper motor. | CO2 | 1 |
| 4. | Mention the merits and demerits of BLDC Motor. | CO2 | 1 |
| 5. | Define reverse saturation current. | CO3 | 1 |
| 6. | Define doping. | CO3 | 1 |
| 7. | Give an example for a sequential circuit. | CO4 | 1 |
| 8. | State the limitation of SR flip flops. | CO4 | 1 |
| 9. | List the various types of sensors. | CO5 | 1 |
| 10. | State the applications of sensors in aircraft system. | CO5 | 1 |

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| **PART – B (6 X 3 = 18 MARKS)** | | | |
| 11. | Differentiate between CFL and LED. | CO1 | 3 |
| 12. | Compare BLDC Motor with brushed DC Motor. | CO2 | 3 |
| 13. | Differentiate between N type and P type semiconductor. | CO3 | 3 |
| 14. | List the types of flip flops. | CO4 | 3 |
| 15. | State the applications of sensors in agricultural instruments. | CO5 | 3 |
| 16. | Define handoff. | CO6 | 3 |

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| **PART – C (6 X 12 = 72 MARKS)**  **(Answer any five Questions from Q.no 17 to 23. Q.No 24 is a Compulsory Question)** | | | | |
| 17. |  | Explain the working of Hydro Power Plant with neat diagram. | CO1 | 12 |
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| 18. |  | Explain the construction and working of Single-Phase Induction Motor. | CO2 | 12 |
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| 19. |  | Explain the operation of NPN transistor in CB configuration with relevant diagrams. | CO3 | 12 |
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| 20. |  | Describe the operation of various logic gates with its symbol and truth table. | CO4 | 12 |
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| 21. |  | Explain the working principle of ultrasound scanner with neat diagram. | CO5 | 12 |
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| 22. | a. | Enumerate the solar power generation process with relevant diagrams. | CO1 | 8 |
| b. | Calculate the energy consumed per month by the following electrical appliances.   |  |  |  |  | | --- | --- | --- | --- | | **Appliance** | **Power Rating** | **No. of item** | **Hours of**  **Operation / day** | | CFL | 20W | 1 | 5 | | 4K LED TV | 60W | 1 | 4 | | Grinder | 200W | 1 | 2 | | Induction Stove | 45W | 1 | 7 | | CO1 | 4 |
|  |  |  |  |  |
| 23. | a. | Discuss the process of color coding in resistor with suitable examples. | CO3 | 6 |
| b. | Compare combinational with sequential circuit with necessary diagrams. | CO4 | 6 |
|  |  | **Compulsory:** |  | |
| 24. |  | Paraphrase the operational principle of a communication system with neat block diagram. | CO6 | 12 |