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

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**End Semester Examination – Apr/May – 2018**

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| **Code :** | **17EE1001** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **BASIC ELECTRICAL ENGINEERING** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | | **Course Outcome** | **Marks** |
|  | | **PART-A(10X1=10 MARKS)** | | |
| 1. | The unit of electric potential is \_\_\_\_\_\_\_\_\_\_ | | CO1 | 1 |
| 2. | Define ohm’s law. | | CO1 | 1 |
| 3. | The coefficient of coupling is given by\_\_\_\_\_\_\_\_\_\_\_. | | CO3 | 1 |
| 4. | Write down the conventional name for synchronous generator. | | CO3 | 1 |
| 5. | The power factor of a pure inductive circuit is \_\_\_\_\_\_\_\_\_\_. | | CO4 | 1 |
| 6. | Classify the transmission lines based on the distance. | | CO4 | 1 |
| 7. | The difference between speed of revolving magnetic field (RMF) and speed of rotor in an induction motor is \_\_\_\_\_\_\_\_\_\_. | | CO4 | 1 |
| 8. | Slip is the difference between \_\_\_\_\_\_\_\_\_\_. | | CO4 | 1 |
| 9. | For better Earthing, the earth pit is filled with alternate layers of \_\_\_\_\_\_\_\_\_\_\_\_. | | CO6 | 1 |
| 10. | Induction type energy meter is an indicating instrument. State true (or) false. | | CO5 | 1 |

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|  | | **PART B(5 X 3= 15 MARKS)** | | |
| 11. | Define Temperature Co-efficient of Resistance and write down its related equations. | | CO1 | 3 |
| 12. | Write the Law’s of Electromagnetic Induction briefly. | | CO1 | 3 |
| 13. | Sketch the electrical equivalent of DC series motor and DC shunt motor. | | CO3 | 3 |
| 14. | List the classifications of Transmission lines. | | CO4 | 3 |
| 15. | Give the details on Stair case wiring. | | CO6 | 3 |

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|  | | **PART C(5 X 15= 75 MARKS)** | | | |
| 16. | a. | | Obtain the equation for the voltage across any resistance in a series circuit having ‘n’ number of different resistances. | CO2 | 5 |
| b. | | Using Kirchhoff’s laws, find the current in various resistors in the circuit shown below: | CO2 | 10 |
|  | | (OR) | | | |
| 17. | a. | | Write notes on Current source and Voltage source. Discuss the difference between electric and Magnetic circuits | CO1 | 10 |
| b. | | Give the characteristics of series and parallel circuit. | CO2 | 5 |
| 18. | a. | | Derive the expression for RMS, average, form factor and peak factor ofsinusoidal alternating current quantity. | CO2 | 10 |
| b. | | Compare and illustrate Mutual induction and Mutual inductance | CO2 | 5 |
|  | | (OR) | | | |
| 19. |  | | Discuss the principle of operation of Transformer and classify its type according cooling. Derive the EMF equation of a single phase Transformer. | CO3 | 15 |
| 20. |  | | How electrical energy is generated in a Thermal Power Station? Explain in detail with neat diagrams. | CO4 | 15 |
|  | | (OR) | | | |
| 21. | a. | | Explain with suitable diagram about the Solar photovoltaic power generation system | CO4 | 7 |
| b. | | Explain with an example for calculating the Electricity tariff for a Hostel room. | CO6 | 8 |
| 22. |  | | With neat diagrams, explain the construction and working of Three phase induction Motor. | CO3 | 15 |
|  | | (OR) | | | |
| 23. | a. | | Elaborate the types of DC motor. | CO3 | 9 |
| b. | | Distinguish between Halfstep and Fullstep in a stepper Motor. | CO3 | 6 |
| 24. | a. | | Discuss the different methods of obtaining controlling torque in indicating instruments. | CO5 | 8 |
| b. | | Brief about Staircase and fluorescent lamp wiring. | CO6 | 7 |
|  | | (OR) | | | |
| 25. |  | | With a neat diagram, explain the construction and working principle of moving coil instruments. | CO4 | 15 |