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

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

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

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| **Q. No.** | **Questions** | | **Course Outcome** | **Marks** |
|  | | **PART-A(20X1=20 MARKS)** | | |
| 1. | The power factor of a D.C. circuit is always \_\_\_\_\_\_\_ | | CO1 | 1 |
| 2. | Write the disadvantage of series circuit. | | CO1 | 1 |
| 3. | The ratio of active power to apparent power is known as\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | | CO1 | 1 |
| 4. | Form factor for a sine wave is\_\_\_\_\_\_\_\_ | | CO1 | 1 |
| 5. | Conductivity is analogous to \_\_\_\_\_\_\_\_\_ | | CO2 | 1 |
| 6. | Why laminated core is used in electrical machine. | | CO2 | 1 |
| 7. | A ferrite core has less eddy current loss than an iron core because\_\_\_\_\_ | | CO2 | 1 |
| 8. | Mention the Relative permeability of vacuum. | | CO2 | 1 |
| 9. | List the thermal power plants in Tamilnadu. | | CO3 | 1 |
| 10. | Give the types of radiation associated with nuclear fission. | | CO3 | 1 |
| 11. | Write the factors to be considered for the selection of site for hydro power plant. | | CO3 | 1 |
| 12. | Mention the types of wind machines. | | CO3 | 1 |
| 13. | Write down the applications of DC series motor. | | CO4 | 1 |
| 14. | How transformers are classified according to their construction? | | CO4 | 1 |
| 15. | Name the two windings of a single-phase induction motor. | | CO4 | 1 |
| 16. | Give the type of induction motor used in wet grinders. | | CO4 | 1 |
| 17. | A \_\_\_\_\_ device prevents the oscillation of the moving system and enables the latter to reach its final position quickly | | CO5 | 1 |
| 18. | In a portable instrument, the controlling torque is provided by\_\_\_\_\_\_\_\_\_\_\_ | | CO5 | 1 |
| 19. | Specify the objective of earthing or grounding. | | CO5 | 1 |
| 20. | Write the various types of Fuses. | | CO5 | 1 |

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|  | | **PART B(10 X 5= 50 MARKS)**  **(Answer any 10 from the following)** | | |
| 21. | If “n” number of resistor are connected in series and parallel, Derive the expression for R equivalent. | | CO1 | 5 |
| 22. | State and explain Krichoff’s laws. | | CO1 | 5 |
| 23. | Compare electric and magnetic circuits. | | CO2 | 5 |
| 24. | Discuss the characteristics of diamagnetic materials. | | CO2 | 5 |
| 25. | Write about principle of nuclear energy and chain reaction. | | CO3 | 5 |
| 26. | Discuss about the different types of tariff. | | CO3 | 5 |
| 27. | Draw and explain the structure of modern power systems. | | CO3 | 5 |
| 28. | Briefly explain the working principle of single phase transformer with neat diagram. | | CO4 | 5 |
| 29. | Describe the operation of capacitor start induction run motor with a neat diagram. | | CO4 | 5 |
| 30. | A three phase phase induction motor is wound for 4 poles and is supplied from 50-Hz system. Calculate (i) the synchronous speed (ii) the rotor speed, when slip is 4%. | | CO4 | 5 |
| 31. | Illustrate the operation of repulsion type moving iron instrument. | | CO5 | 5 |
| 32. | Briefly explain various components of earthing System. | | CO5 | 5 |

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|  | | **PART C(2 X 15= 30 MARKS)**  **(Answer any 2 from the following)** | | | |
| 33. | a. | | Determine the current in the 5 ohm resistor in the network shown in figure below. | CO1 | 8 |
| b. | | Derive the relation between coefficient of coupling,the self inductance and mutual inductance. | CO2 | 7 |
| 34. | a. | | Draw the general layout of thermal power plant and explain the working of different circuits. | CO3 | 10 |
| b. | | Elaborate about the components of Hydro power plant. | CO3 | 5 |
| 35. | a. | | With neat sketch, describe the construction and principle of operation of three phase induction motor. | CO4 | 10 |
| b. | | Describe the working of permanent magnet moving coil instrument. | CO5 | 5 |

**ALL THE BEST**