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

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**End Semester Examination – Nov/Dec – 2018**

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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. | Identify the type of circuit is shown in figure. (series or parallel) | CO1 | 1 |
| 2. | Which pair of circuits shown in figure are equivalent?  C:\Users\frandajosh\Documents\My Scans\Prob1.jpg | CO2 | 1 |
| 3. | Equation for a sinusoidal current quantity is given by \_\_\_\_\_\_\_. | CO1 | 1 |
| 4. | \_\_\_\_\_\_\_\_\_\_ is any closed path of a circuit. | CO2 | 1 |
| 5. | 1 weber is equal to \_\_\_\_\_ Maxwell. | CO1 | 1 |
| 6. | Self-Inductance is given by L = - (True or False). | CO1 | 1 |
| 7. | The conduit that carries the water from valve house to power house in a hydro power plant is \_\_\_\_\_\_\_\_\_\_\_\_\_\_. | CO4 | 1 |
| 8. | \_\_\_\_\_\_\_\_system is preferable when the distance of transmission is more than 600km for overhead line. | CO4 | 1 |
| 9. | Fault location & repair is difficult in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ distribution system | CO4 | 1 |
| 10. | MMF is the product of \_\_\_\_\_\_\_\_ flowing through a coil of N turns. | CO1 | 1 |
| 11. | Unit of magnetic flux is \_\_\_\_\_. | CO1 | 1 |
| 12. | State the reason why the transformer cores are made of laminations. | CO3 | 1 |
| 13. | Three Phase Induction motor is a self-starting motor – True or False. | CO3 | 1 |
| 14. | The back emf equation for a DC motor is given by \_\_\_\_\_\_\_. | CO3 | 1 |
| 15. | The expression for transformation ratio of a Transformer is given by \_\_\_\_\_\_\_\_\_. | CO3 | 1 |
| 16. | If N1 and N2 are the number of turns of the primary and secondary windings of a transformer, in order to step up the voltage N2 should be \_\_\_\_\_\_ N1. | CO3 | 1 |
| 17. | A 2000 / 200 V, 20 kVA, ideal transformer has 66 turns in the secondary. The number of primary turns is \_\_\_\_. | CO3 | 1 |
| 18. | Energy meter is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ meter. | CO5 | 1 |
| 19. | \_\_\_\_\_\_\_\_\_\_\_ type of switch is fixed in-fixed with the wall and it does not project out. | CO6 | 1 |
| 20. | In which type of wiring, the V.I.R conductors are run in metallic tubes? | CO6 | 1 |

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| **PART B(10 X 5= 50 MARKS)**  **(Answer any 10 from the following)** | | | |
| 21. | Define Ohm's law and mention its limitations. | CO2 | 5 |
| 22. | Two resistors of 5 ohms and 10 ohms are connected in parallel. If the total current is 30A. Find the current through each resistor. | CO2 | 5 |
| 23. | Define the following: (a) Magnetomotive Force, (b) Reluctance, (c) Permeability. | CO1 | 5 |
| 24. | Give the similarities and differences between magnetic and electric circuits. (with any 6 points). | CO1 | 5 |
| 25. | What is coefficient of coupling? Derive an expression for the same. | CO1 | 5 |
| 26. | Draw the Single Line Power System diagram. | CO4 | 5 |
| 27. | Mention the disadvantages of a dc transmission system. | CO4 | 5 |
| 28. | List out the components in the Nuclear Chamber of a Nuclear Power Generating Station. | CO4 | 5 |
| 29. | Explain the principle and working of a Transformer with neat diagram. | CO3 | 5 |
| 30. | Calculate the energy consumed per month by the following electrical appliances. | CO3 | 5 |
| 31. | Compare CFL and LED. | CO6 | 5 |
| 32. | With neat diagram elucidate the operation of fluorescent lamp wiring. | CO6 | 5 |

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| **PART C(2 X 15= 30 MARKS)**  **(Answer any 2 from the following)** | | | | |
| 33. | a. | An electrical network is arranged as shown in the following figure. Find the  i) Total equivalent circuit resistance ; ii) Total current in branch AF. | CO2 | 10 |
| b. | State the Kirchhoff’s Current and Voltage Laws. | CO2 | 5 |
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| 34. | a. | Elucidate the working principle and construction of DC Generator with neat Diagram. | CO3 | 10 |
| b. | Illustrate the power generating mechanism in a thermal power generating station with neat diagram. | CO4 | 5 |
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| 35. | a. | Describe the stair-case wiring with neat diagrams. | CO6 | 7 |
| b. | Illustrate the working of PMMC Instrument with neat diagram. | CO5 | 8 |