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



**End Semester Examination – Nov/Dec-2017**

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

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Define Ohm's law and mention its limitations. | CO1 | 5 |
| b. | Using Kirchhoff’s laws, find the current in various resistors in the circuit shown below: | CO2 | 10 |
| c. | Obtain an equivalent voltage source for the following circuit. | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | From the sinusoidal voltage equation given, find Vavg, Vrms, form factor, peak factor, frequency, time period; v = . | CO4 | 10 |
| b. | Write a note on three phase system. | CO1 | 5 |
| c. | Define form factor and peak factor of an alternating quantity. | CO1 | 5 |
|  |  |  |  |  |
| 3. | a. | Elucidate the self inductance with necessary equations. Also derive the relationship between self-induced emf and self inductance. | CO2 | 14 |
| b. | Describe Magnetic flux density (B) and Magnetic Field Intensity (H). | CO2 | 6 |
| (OR) | | | | |
| 4. | a. | Give the similarities and differences between magnetic and electric circuits. | CO2 | 10 |
| b. | A coil has 1000 turns and it carries a current of 10A. If the flux is 0.5 wb, find the self inductance of the coil. | CO2 | 4 |
| c. | State the Faraday’s Law of Electromagnetic Induction with necessary equations. | CO1 | 6 |
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| 5. | a. | Sketch the diagram of a Hydro Power Plant. | CO4 | 8 |
| b. | Draw the single-line Power System Diagram . | CO4 | 6 |
| c. | Compare overhead and underground distribution system. | CO4 | 6 |
| (OR) | | | | |
| 6. |  | Illustrate the power generating mechanism in a thermal power generating station with neat diagram. | CO4 | 20 |
|  |  |  |  |  |
| 7. | a. | A 6 pole lap wound DC Generator has 1000 conductors. The flux/pole is 10 milliwebers. Determine the induced emf in the armature, if it is rotating at a speed of 600 rpm. | CO5 | 5 |
| b. | Explain the working principle and construction of DC Generator with neat Diagram. | CO3 | 15 |
| (OR) | | | | |
| 8. | a. | Explain the principle of operation of Transformer and mention its types. | CO3 | 10 |
| b. | List out the applications of Three Phase Induction Motor. | CO3 | 5 |
| c. | Give the types of DC Motor. | CO3 | 5 |
|  | |  |  |  |
|  | | **Compulsory:** |  |  |
| 9. | a. | Single lamp can be controlled with 2 two way switches – Justify with a staircase wiring diagram. | CO6 | 10 |
| b. | Draw the diagram of PMMC Instrument & explain its operation. | CO5 | 10 |

ALL THE BEST