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

**Supplementary Examination – June – 2017**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **14EE1001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **BASIC ELECTRICAL ENGINEERING** | **Max. marks :** | **100** |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Q. No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. | a. | State the Kirchhoff’s Laws and demonstrate them using a circuit. | CO2 | 10 |
| b. | For the circuit given below, determine the following quantities:  i) Total Resistance RT; ii) Total current IT; iii) Power delivered by the voltage source. | CO3 | 10 |
| (OR) | | | | |
| 2. | a.. | Determine the equivalent resistance RT by using star – delta transformation and find the total current IT delivered by the voltage source in the circuit given below. | CO3 | 15 |
| b. | Write down the expressions for the equivalent star network resistances from a given delta network. | CO1 | 5 |
| 3. |  | Explain self inductance with necessary equations. Also derive the relationship between self-induced emf and self inductance. | CO3 | 20 |
| (OR) | | | | |
| 4. | a. | Compare magnetic and electric circuits. | CO3 | 14 |
| b. | Define the following: i) Magnetic field intensity; ii) Fringing Effect | CO2 | 6 |
| 5. |  | With a neat sketch explain the operation of Thermal Power Generating Station. | CO3 | 20 |
| (OR) | | | | |
| 6. | a. | Derive the expressions for rms value, average value, form factor and peak factor of an alternating sinusoidal voltage quantity. | CO2 | 12 |
| b. | Discuss the merits and demerits of Overhead Distribution systems with Underground Distribution systems. | CO3 | 8 |
| 7. |  | Describe the working principle and construction of DC Generator with neat diagrams. | CO1 | 20 |
| (OR) | | | | |
| 8. | a. | Classify the types of DC Motor. | CO1 | 5 |
| b. | List out the applications of three phase induction motor. | CO2 | 5 |
|  | c. | Illustrate the working principle of Transformer. | CO1 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Single lamp can be controlled with 2 two way switches – Justify this statement with staircase wiring and a neat diagram. | CO3 | 10 |
| b. | With neat diagram elucidate the working of a fluorescent lamp. | CO3 | 10 |

ALL THE BEST