B.Tech. 2nd Semester (Common for all Branches)

G- Scheme Examination, May-2019

BASIC OF ELECTRICAL ENGINEERING

Paper-ESC-EE-101-G

Time allowed : 3 hours] *[Maximum marks : 75*

Note : ***Question No. 1 is compulsory.*** *Attempt any* ***one*** *question from each section. All questions carry equal marks.*

1. Explain the following :

   (a) Significance of Phasor Diagram. 2.5

   (b) BH Curve and its Characteristics. 2.5

   (c) Torque-Speed characteristics of DC Motor. 2.5

   (d) Power factor and its improvement. 2.5

   (e) Voltage and Current sources. 2.5

   (f) R.M.S. value. 2.5

Section-A

2. (a) What do you mean by Kirchhoff's Law ? What are the different types ? Explain each with suitable example. 8

   (b) Explain the analysis of simple circuit with dc excitation in detail. 7

3. Explain the following with taking suitable example :

   (a) Thevenin Theorem 8

   (b) Norton Theorem 7

Section-B

4. (a) What do you mean by Transformer ? What are the different types of transformers ? Explain the working of each in detail. 7

   (b) What do you mean by regulation ? How it is useful in transformer testing and calculating its efficiency ? Explain. 8

5. Discuss about the following :

   (a) Power measurement by Two Wattmeter Method 5

   (b) Auto Transformer 5

   (c) Voltage and Current relations in Star Connection 5

Section-C

6. How the generation of rotating magnetic field works ? Explain the construction and working of three-phase induction motor in detail with suitable diagrams. Also describe the different applications of three-phase induction motor. 15

7. (a) Describe the relationship between torque and speed in DC Motor. 8

(b) Explain the construction and working of synchronous generators in detail. 7

Section-D

8. Differentiate the following :

(a) Watt meter and Energy meter 8

(b) Moving iron Type and Moving Coil Types 7

9. Explain the following detail :

(a) Induction type Voltmeter 5

(b) SFU and MCB 5

(c) ELCB and MCCB 5