8. (a) Write the elementary calculations of energy consumption in electricity supply system. **8**

(b) Write a short note on Battery Back-up. **7**

9. (a) What is the difference between loop and mesh in an electrical circuit ? **2**

(b) What is power factor and its importance ? **3**

(c) Why is ammeter always connected in series ? **2**

(d) Write the concept of Slip in Three Phase Induction Motor. **3**

(e) Discuss the different types of Batteries. **3**

(f) What is the difference between wire and a cable ? **2**

18A11

B. Tech. EXAMINATION, 2022

(Second Semester)

(C Scheme) (Main & Re-appear)

EE101C

BASIC ELECTRICAL ENGINEERING

(Common for All Branches)

Time : 3 Hours] [*Maximum Marks : 75*

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

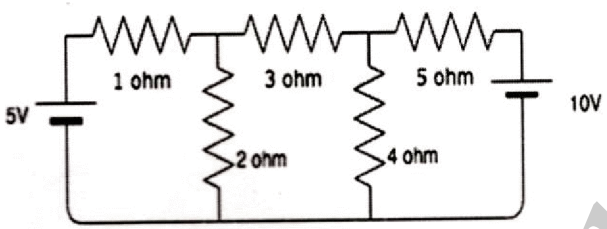
Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **9** is compulsory.

Unit I

1. (a) State and drive the Kirchhoff's current and voltage law equations with circuit diagram. **7**

(b) State the Norton's theorem with circuit diagram. **8**

2. Find the current in each branch using nodal analysis in the circuit given below : **15**



Unit II

3. Two elements in series circuit are connected across V = 5 sin (314t + 120°) V and current equation is I = 15 sin (314t + 150°) A. Find out Resistance, Inductance, Impedance, Power Factor, Active Power, Reactive Power. **15**

4. (a) Write the relation between Line Voltage and Phase Voltage for Star connections. **7**

(b) Explain the time domain analysis of first order RC series circuit. **8**

Unit III

5. Explain the construction and working of single phase transformer. Draw the phasor diagram of ideal transformer for resistive, inductive and capacitive load. **15**

6. (a) Explain the construction and working principle of synchronous generator. **8**

(b) Write the construction and working of capacitor start single phase induction motor. **7**

Unit IV

7. Write short notes on the following :

(a) Earthing and its importance **7**

(b) MCB and MCCB. **4+4**