No. of Printed Pages : 03 **Roll No. .....**

18A11

B. Tech. EXAMINATION, 2021

(First Semester)

(C-Scheme) (Main & Re-appear)

(Common for all Branches)

EE101C

BASIC ELECTRICAL ENGINEERING

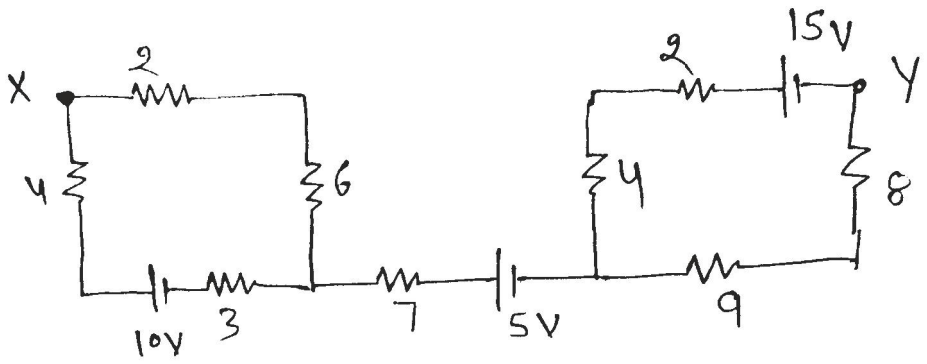
Time : 2½ Hours] [*Maximum Marks :* 75

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.

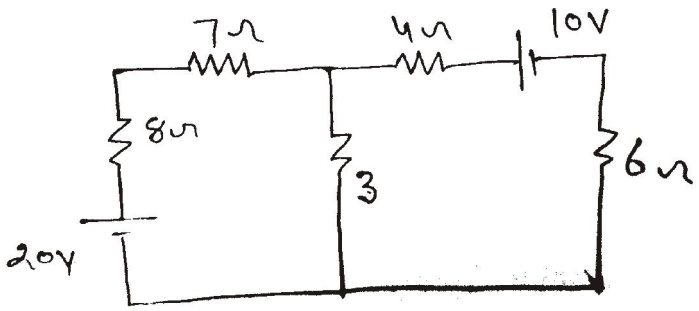
Note : Attempt *Four* questions in all. All questions carry equal marks.

1. (a) Draw a linear bi-lateral circuit diagram and solve this circuit by Thevenin theorem.

(b) Find voltage across terminals X and Y in given circuit.



2. Find current across 6 ohms resistance using superposition theorem and justify the result by nodal analysis. Fig. as given under.



3. (a) Define RMS value, Average value and form factor.

(b) Line Voltage and current relationship in case of three-phase star connection.

4. (a) A voltage V = (150 + *j*180) volt is applied across an impedance and the current is found to be I = (5 – *j*4) A Determine :

(i) Scalar impedance

(ii) Reactance

(iii) Power consumed.

(b) Derive a relation of RLC series circuit connected across to ac supply. And find the condition of resonance and resonance frequency.

5. Define working principle of transformer. Explain the phasor diagram of ideal transformer under no load condition.

6. (a) Describe the working principle, construction of induction motor.

(b) State different types of DC motors. Draw the characteristic of dc series motor.

7. (a) Write short note on FSU and MCCB.

(b) Different type of wires and cables.

8. (a) Describe the Earthing. Need of earthing in electrical system. Explain any *one* type of earthing in detail with diagram.

(b) Write short note on Auto-transformer.