Roll No. .....

3010

B. Tech. 1st Semester (Common for All Branches) Examination – March, 2021

BASIC ELECTRICAL ENGINEERING

Paper : ESC-EE-101-G

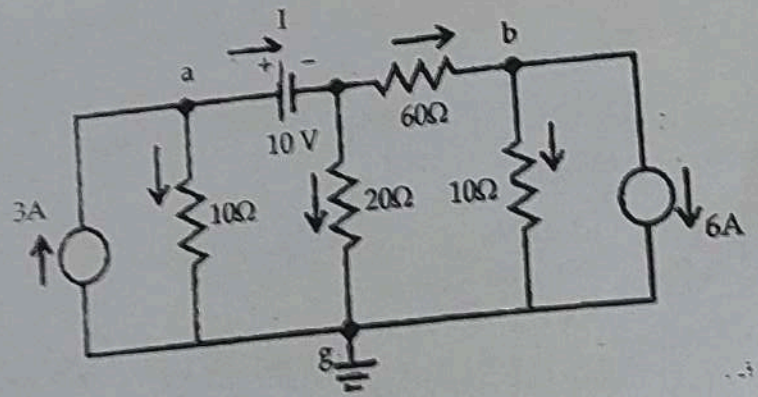
Time : Three Hours] *[Maximum Marks : 75*

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

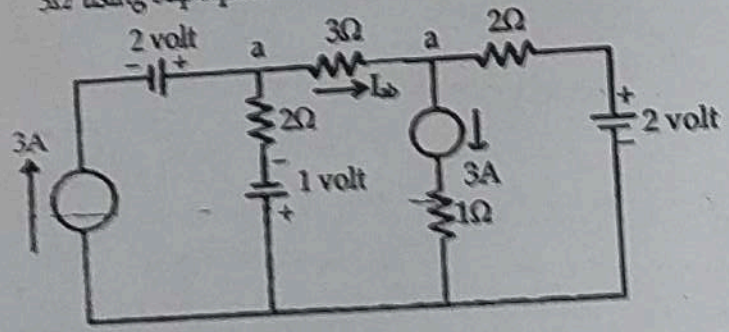
Note : Attempt any *five* questions. All questions carry equal marks.

1. (a) State Ohm's law and its significance.
   (b) Explain various types of losses in transformer.
   (c) Discuss the principle of DC motor.
   (d) Explain ELCB.

2. Find the value of current (I) flowing through the battery using "node voltage method".



3. Calculate the current I_{ab} flowing through the resistor 3Ω using superposition theorem.



4. Explain how open circuit/short circuit tests separate out the core loss and copper loss.

5. (a) Explain the construction and working of an Auto transformer.

   (b) Derive the relation between voltage and current in delta connection.

6. Draw and explain the various speed control methods of DC motor.

7. Explain construction, principle, working of synchronous generator. Also draw the suitable diagram.

8. Explain the construction and operating principle of moving iron type instruments.

9. Write short note on :

   (a) Methods of power factor improvement

   (b) Types of Batteries