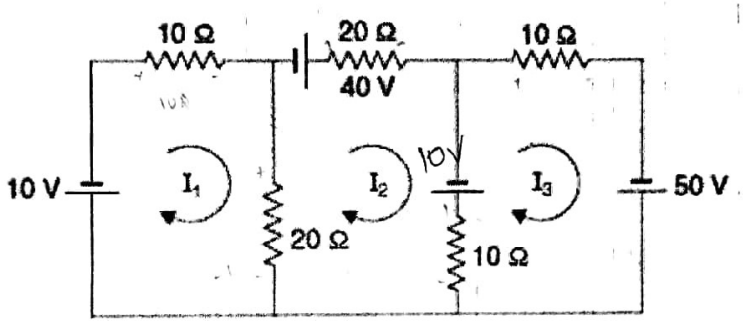
Name of student ---------- Roll No ----------

MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY
DEPARTMENT OF ELECTRICAL ENGINEERING
Mid Term Examination March 2024
B. Tech I Semester (**E- Section**)

Subject: Basic Electrical & Electronics Engg (EE108) Date of Exam-21/03/2024

Time: 90 Minutes [9:30-11:00 AM] Max. Marks: 20

NOTE: All question carry equal marks. **FULL CREDIT** is due only to legible, systematically written to the point correct answers.

Q.1	Find I_1, I_2 and I_3 in the network, using loop-current method. 
Q.2	Why average power consumed in pure capacitive circuit is zero? . How does capacitive reactance vary with frequency?
Q. 3	A coil of inductance 0.64 H and resistance 40 Ω is connected in series with capacitor of capacitance 12 μF. Estimate : (i) The frequency at which resonance will occur. (ii) The voltage across the coil and capacitor, respectively and also the supply voltage when a current of 1.5 A at the resonant frequency is flowing. (iii) The supply voltage with a current of 1.5 A flowing at a frequency of 50 Hz.
Q.4	Perform the open circuit test on 230/115 V 15 kVA transformer and answer the following in brief- (i) What is the purpose of this test? (ii) Why the power factor becomes low during the test? (iii) How much voltage you need to apply & why? (iv) What will happen if you apply only 100 V to perform this test?
Q.5	A 230 V/115 V single-phase transformer takes a no-load current of 2 A at a power factor of 0.2 lagging with low voltage winding kept open. If the low voltage winding is now loaded to take a current of 15 A at 0.8 power factor lagging find the current taken by high voltage winding. Draw the vector diagram showing all angles and no load current.