Subject Code:ES103 **ENROLLMENT NO.....**

Minor Exam-Feb 2024

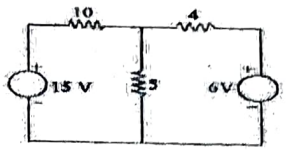
Basic Electrical Engineering

Time: 01Hr **Maximum marks: 30**

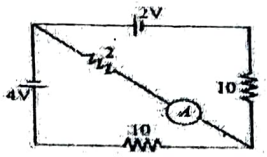
Note: Attempt questions as directed. Calculators are allowed.

SECTION-A (Attempt any two questions, Each of 05 Marks)

Q.1 Using Thevenin's theorem calculate the current through the 4 ohms resistor of the circuit of Fig below.



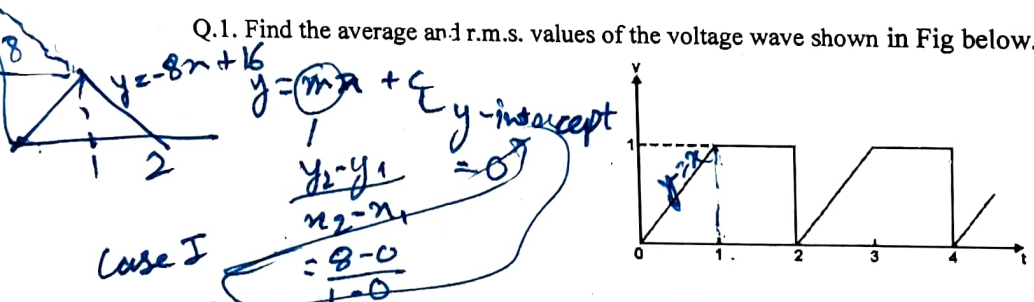
Q.2 Find the ammeter current in Fig below by using Mesh analysis.



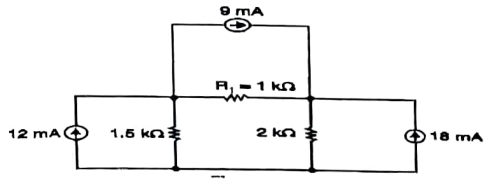
Q.3 Define the following terms
a) Form Factor
b) Active and Passive Elements
c) Peak Factor
d) Bilateral Circuit
e) Linear Circuit

SECTION-B (Attempt any One question, 10 Marks)

Q.1. Find the average and r.m.s. values of the voltage wave shown in Fig below.



Q.2 State Superposition Theorem and using it find the voltage across R_1 (= 1 k Ω) in the circuit shown in Fig below.



SECTION-C (Compulsory, 10 Marks)

Q 1. State and verify Maximum Power Transfer Theorem for DC Circuits. Also show that
a) Maximum Power is $V_{Th}^2/4R_L$
b) Efficiency at Maximum Power is 50%

**********END**********