

REG.NO.: 25BEC0242

VIT[®]Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SLOT: B1+TB1

SCHOOL OF ELECTRICAL ENGINEERING
CONTINUOUS ASSESSMENT TEST - I
FALL SEMESTER 2025-2026

Programme Name & Branch : B.Tech (BYB, BDE, BEE, BEC)
Course Code and Course Name : BAECE101 & Basic Engineering
Faculty Name(s) : Dr. Naveen Kumar, Dr. Jaffino, Dr. Venkata Ramana Kasi,
 Dr. J Belwin Edward, Dr. K. V. N. Kavitha, Dr. J. Vanishree,
 Dr. M. N. Venkataraman, Dr. V. Bagyaveereswaran,
 Dr. Maddela Chinna Obaiah
Class Number(s) : VL2025260106814, 6816, 6277, 6310, 6716, 6731, 6308,
 6306, 6817
Date of Examination : 18/08/2025
Exam Duration : 90 minutes
Maximum Marks: 50
General instruction(s): Answer All Questions

Course Outcomes Statements:

CO. 1: Analyse the electrical circuits, electrical motors and the role of power electronics in industrial applications.

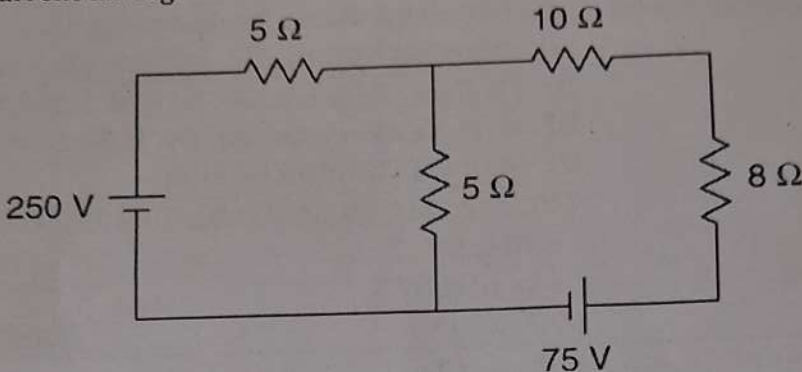
Q. No	Questions	M	CO	BL
1.	Find the current through the $4\ \Omega$ resistor in the network of Fig. 1 using mesh analysis. Fig. 1	10	1	3
2.	Find the current through the $10\ \Omega$ resistor in Fig. 2 using superposition theorem. Fig. 2	10	1	3

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FALL SEMESTER 2019					
3.	Find the current through the $8\ \Omega$ resistor in Fig. 3 using Thevenin's theorem.  Fig. 3	10	1	3	
4.	A circuit consists of a pure resistor, a pure inductor, and a capacitor connected in series. When the circuit is supplied with 100 V, 50 Hz supply, the voltages across inductor and resistor are 240 V and 90 V respectively. If the circuit takes a 10 A leading current, calculate (a) value of inductance, resistance and capacitance, (b) power factor of the circuit, and (c) voltage across the capacitor and (d) real power consumed by the circuit.	10	1	3	
5.	Discuss the working principle of single-phase induction motor with neat sketch. Why is it not self-starting? Also give its applications.	10	1	2	
