

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

Programme Name & Branch	: B. Tech & BCM/BME/BMV
Course Code and Course Name	: BAEEE101 and Basic Engineering
Faculty Name(s)	: Dr.Dhanamjayulu C/Dr.M Praveen Kumar/Dr.Sudhakar N Dr.Rama Prabha D/Dr.Bagyaveereswaran V/ Dr.Abhishek G/ Dr.Yuvapriya T/ Dr.S Karthik Kiran
Class Number(s)	: 6305/ 6312/ 6317/6320/6303/6336/6336/6314
Date of Examination	: 09/10/2025
Exam Duration	: 90 minutes
	Maximum Marks: 50

General instruction(s):

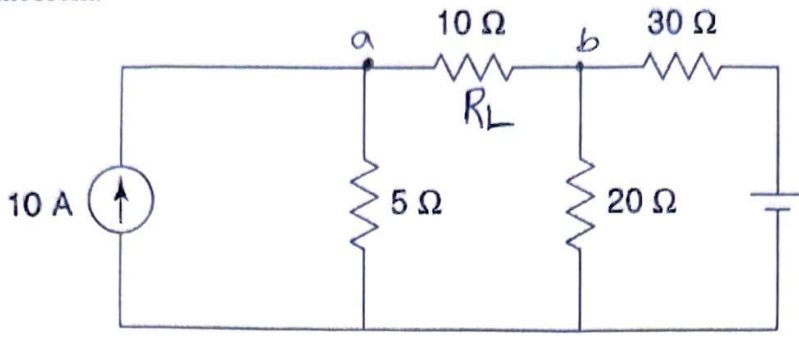
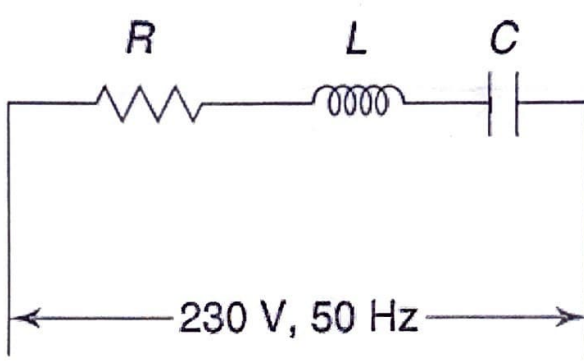
- **Closed Book Examination**
- Answer All Questions
- Rough work should not be done on question paper. It will be treated as malpractice.
- M - Max mark; CO – Course Outcome; BL – Blooms Taxonomy Level (1 – Remember, 2 – Understand, 3 – Apply, 4 – Analyse, 5 – Evaluate, 6 – Create)

Course Outcomes Statement:

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

Q. No	Question	M	CO	BL
1.	Calculate the current through the $5\ \Omega$ resistor for the network shown in Fig.1 using Nodal analysis. Fig.1.	10	01	03
2.	Find the current through the $4\ \Omega$ resistor in Fig.2 using Superposition theorem. Fig.2	10	01	03

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3.	Find the current through the $10\ \Omega$ resistor in Fig.3 using Thevenin theorem.	10	01	03
 Fig.3		10	01	03
4.	A resistor of $20\ \Omega$, an inductor of $0.05\ \text{H}$, and a capacitor of $50\ \text{mF}$ are connected in series as shown in Fig 4. A supply voltage of $230\ \text{V}$, $50\ \text{Hz}$ is connected across the series combination. Calculate the following: (a) impedance, (b) current drawn by the circuit, (c) phase difference and power factor, and (d) active and reactive power consumed by the circuit.	10	01	03
 Fig.4.		10	01	03
5.	Explain the construction and working principle of a single-phase induction motor and mention its applications.	10	01	03