

REG.NO.:

0291



VIT

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

SLOT: F1+TF1

SCHOOL OF ELECTRICAL ENGINEERING
FALL SEMESTER 2026-2027
CONTINUOUS ASSESSMENT TEST - II

Programme Name & Branch : B.Tech. BME, BCE, BCB
 Course Code and Course Name : BAEEE101 - Basic Engineering
 Faculty Name(s) : Subramanian K, Mukul Chankaya, Himadri Lala,
 Vanishree J, Abhishek G, B. Jaganatha Pandian, Janeshwaran G
 Class Number(s) : VL2026270105390, 5396, 5398, 5401, 5405, 5938, 5953
 Date of Examination : 03/10/2026 11:00 AM - 12:30 PM
 Exam Duration : 90 minutes Maximum Marks: 50

General instruction(s):

- 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 Statements:

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

Q. No	Question	M	CO	BL
1.	Using mesh analysis, find the mesh currents and the current flowing through each resistor with direction.	10	1	3
2.	Using Thevenin's theorem find the current through the 25Ω resistor if $E = 3\text{V}$	10	1	4

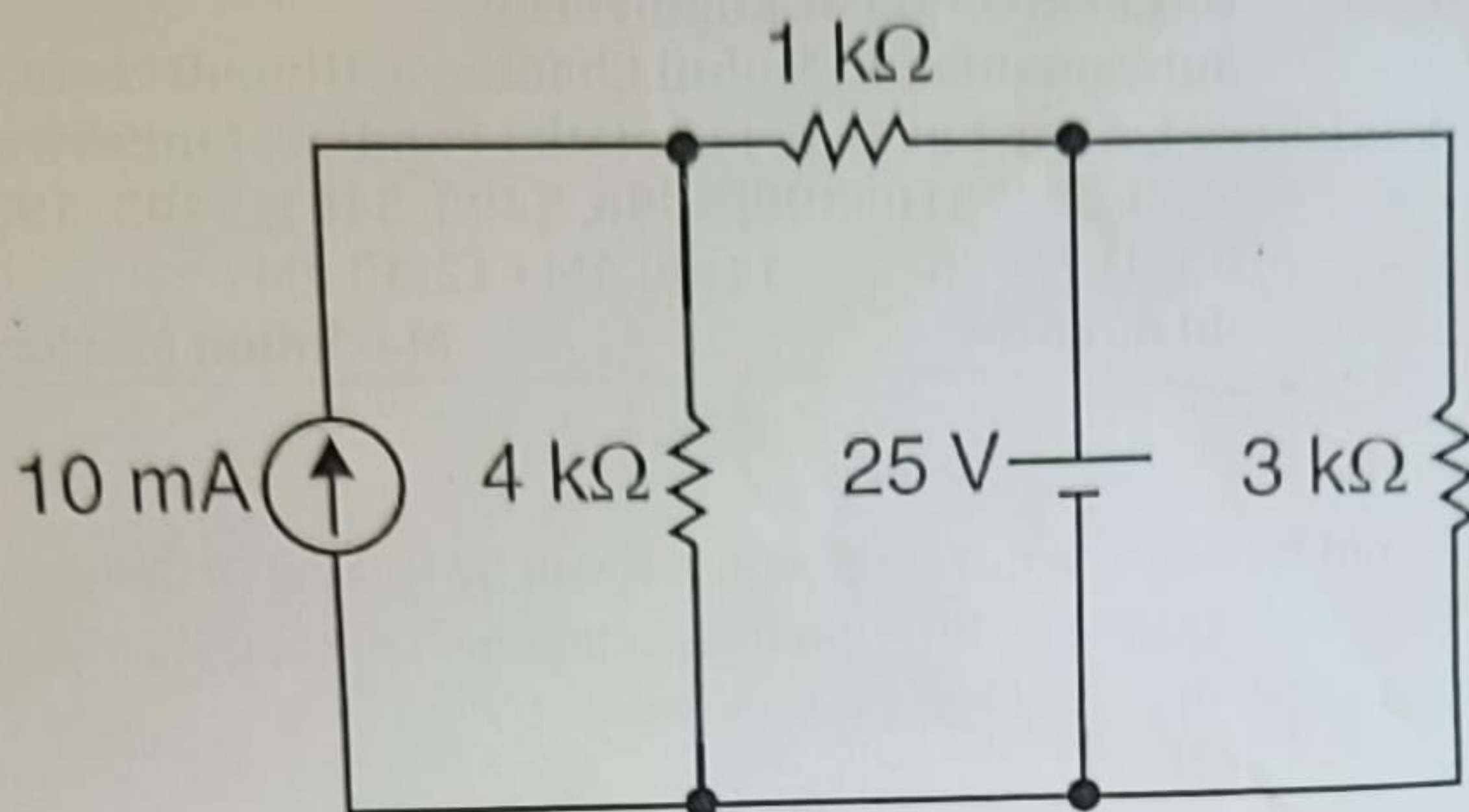
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3.

Apply superposition theorem to find the current through the $3\text{k}\Omega$ resistor

10

1

3

4.

A 230 V , 50 Hz a.c. supply is applied to a coil of 100 mH inductance and $50\ \Omega$ resistance connected in series with a $2.2\ \mu\text{F}$ capacitor. Calculate (i) impedance (ii) current (iii) phase angle between current and voltage (iv) power factor and (v) real power and reactive power.

10

1

3

5.

With neat sketch, discuss the construction and working of a BLDC motor

10

1

2