

REG.NO.: 258870142



VIT

Vellore Institute of Technology
(Chartered as an Institute under section 3 of UGC Act, 1956)

SLOT: D2+TD2

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

Programme Name & Branch : B. TECH
 Course Code and Course Name : BAEEEE101 & Basic Engineering
 Faculty Name(s) : Jitendra Kumar Goyal, Arun S L, Kalaiselvan N, Kavitha K.V.N, Vaegae Naveen Kumar, Sudhakar M S
 Class Number(s) : VL2025260106193, 6295, 6196, 6813, 6815, 6818
 Date of Examination : 08/10/2025
 Exam Duration : 90 minutes Maximum Marks: 50

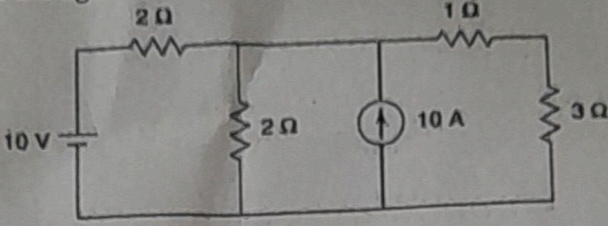
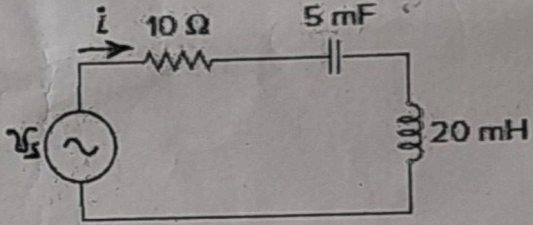
General instruction: Assume if any data is missing

- 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 current analysis method, determine the currents i_1, i_2, i_3, and i shown in figure below. Also, calculate the dissipated power across $1\ \Omega$ resistor.	10	1	3
2.	Determine the value of current flowing through $4\ \Omega$ resistor as shown in the figure below using superposition theorem.	10	1	3

3.	Using Thevenin's theorem, calculate the value of current flowing through $3\ \Omega$ resistor shown in the figure below. 	10	1	3
4.	For the series RLC circuit shown in the figure below, If $v_s = 50\sin 200t$, calculate the following parameters of the circuit. - Total impedance - Instantaneous and RMS value of current - Voltage across each element - Power factor - Active and reactive power of the circuit 	10	1	3
5.	With the help of neat cross-sectional diagram, explain the construction and working principle of DC motor. Also, list out any four applications of DC motor.	10	1	2