



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

Vellore – 632014, Tamil Nadu, India
SCHOOL OF ELECTRICAL ENGINEERING
WINTER SEMESTER 2023-2024
CAT-I

SLOT: D2+TD2

Programme Name & Branch :

Course Code:IEEE102L

Course Name

: Basic Electrical and Electronics Engineering

Faculty Members

: BALAJI S, SANTHAKUMAR R, SUBRAMANIAN K, RAJA SINGH R, and GEETHANJALI P

Class Number(s)

: VL2023240504493 , VL2023240504507, VL2023240504505,

VL2023240504507 and VL2023240504496

Date of the Examination

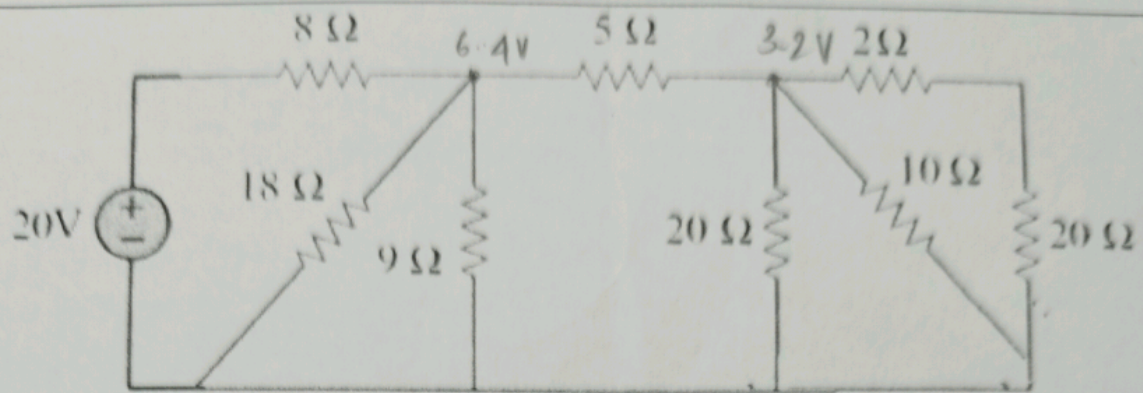
: **14-Feb-2024**

Duration : 90 minutes

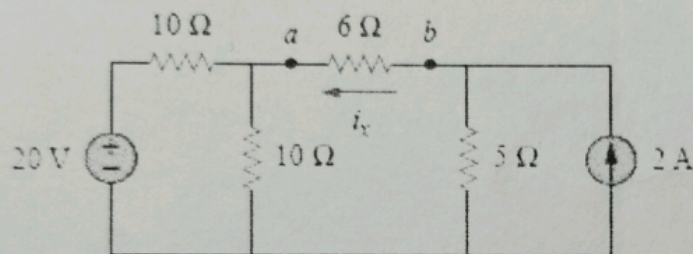
Max. Marks : 50

General instruction(s):

Q. No	Question	Mark
1.	a) Find the total resistance with respect to ab. $= 15\Omega$	10
2.	Find i_1, i_2 and i_3 from the following circuit. $i_1 = 1.66A$ $i_2 = -0.9A$ $i_3 = -3.11A$	10
3.	Find the number of nodes in the following circuit and find node voltage.	10



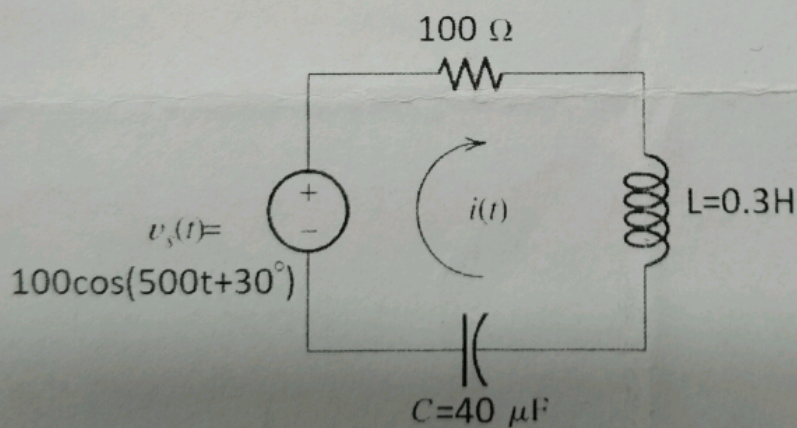
4. Find the Thevenin equivalent circuit across the terminal a-b of the following circuit. A) Find i_x and replace 6Ω resistor to obtain maximum power.



$$\begin{aligned}
 R_{th} &= 10 \\
 V_{th} &= 10 \\
 I_{th} &= 0.625A \\
 P_{max} &= 2.5W
 \end{aligned}$$

10

5. Find the current for the following circuit, the voltage across each element, and find the power dissipated.



$$\begin{aligned}
 I &= 0.5 \\
 V_R &= 50 \\
 V_L &= 75 \\
 V_C &= 25 \\
 P &= 35.25
 \end{aligned}$$

10