

Unit Test -I (2025-26)

S.Y. B. Tech.-Electronics & Telecommunication Engineering

Course Code: EC2054

Course Name: Network Theory

Day & Date: Tuesday 12.08.2025

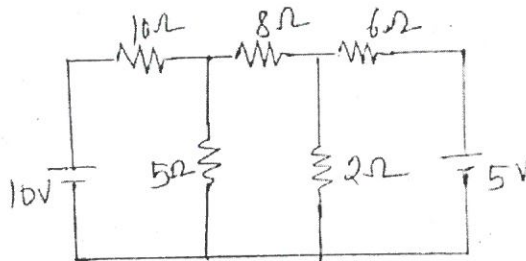
Time: 11:45 PM– 12:4PM

Max Marks- 25

- Instructions:**
- 1) All questions are compulsory.
 - 2) Figures in rounded () brackets within the question, indicate the scheme of marking for respective part of the question, whereas, figures in the first right column indicate total marks for that whole question.
 - 3) CO is the index number of the Course Outcome statement.
 - 4) The Bloom's taxonomy level (BL) for 1,2,3,4,5 and 6 is remember, understand, apply, analyze, evaluate and create respectively.
 - 5) Assume suitable data if necessary.
 - 6) Use of non-programmable calculators is allowed

Solve the following

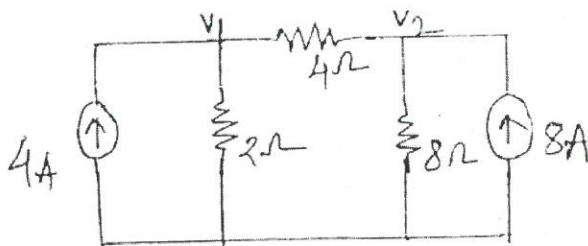
Marks	BT Level	COs
7M	BL3	CO1

Q.1 A Find the current through 8Ω using Thevenin's Theorem

OR

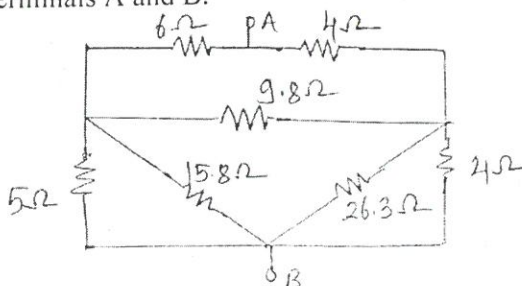
A Apply the node analysis method (3M) to determine the voltages $V_1(2M)$ and $V_2(2M)$ in the given circuit

7M BL3 CO1



B Using the circuit shown, find the equivalent resistance between terminals A and B.

6M BL3 CO1



- Q2 A A constant DC voltage is applied to series R-C circuit at time $t=0$ 06 BL4 CO2
 identify an expression for circuit current and voltage across capacitor.
- B A series R-L circuit consists of resistor of 10Ω and $1H$ inductor. A 06 BL4 CO2
 constant $100V$ DC supply is applied to the circuit at $t=0$. Obtain Current
 equation i , $\frac{di}{dt}$, $\frac{di^2}{dt^2}$ at $t=0^+$.
- OR
- B A series R-C circuit consists of resistor of 20Ω and $0.2F$ capacitor. A 06 BL4 CO2
 constant $30V$ DC supply is applied to the circuit at $t=0$ Obtain Current
 equation.

