Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations – October 2025

Date: 08-10-2025 **Time:** 11.45am to 01.15pm

School: SOCSE	**Program:** B.Tech. (EEE)	
Course Code: EEE1200	**Course Name:** Basics of Electrical and Electronics Engineering	
Semester: I	**Max Marks:** 50	**Weightage:** 25%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Marks	**24**	**26**	**-**	**-**	**-**

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

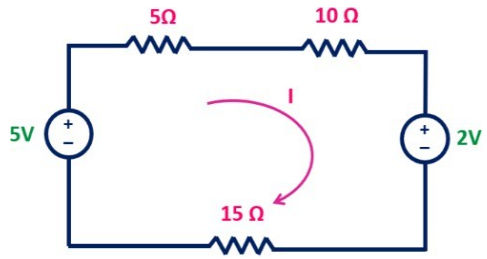
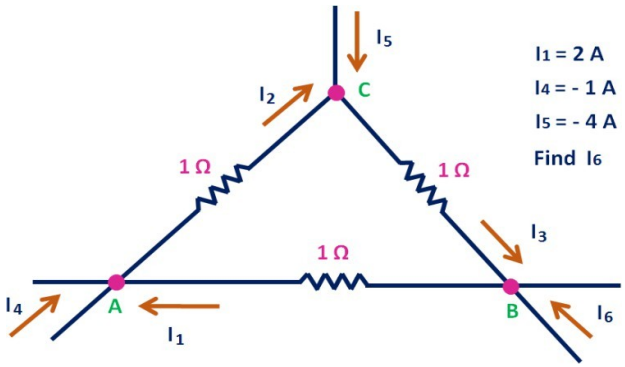
Answer ALL the Questions. Each question carries 2marks. **5Q x 2M=10M**

1	Mention the various types of circuits used in the electrical system.	**2 Marks**	**L1**	**CO1**
2	Write the equivalent resistance when two resistors are connected in series?	**2 Marks**	**L1**	**CO1**
3	With a neat waveform, define i) Frequency, ii) Time period.	**2 Marks**	**L1**	**CO2**
4	Outline the differences between the RMS value and the peak value in an AC supply.	**2 Marks**	**L1**	**CO2**
5	List out the advantages of an AC supply over a DC supply.	**2 Marks**	**L1**	**CO2**

Part B

Answer the Questions. **Total Marks 40M**

6.	a.	State and explain Ohm's law with a neat diagram. Mention its limitations.	**06 Marks**	**L2**	**CO1**

	b.	Find the current (I) and the voltage drop across a 15Ω resistor. 	**04 Marks**	**L3**	**CO1**
Or					
7.	**a.**	State and explain Kirchhoff's Voltage Law with a neat circuit diagram and equation.	**06 Marks**	**L2**	**CO1**
	b.	For the given circuit, find the current I_6. 	**04 Marks**	**L3**	**CO1**

8.	**a.**	Apply Kirchhoff's Current Law at a circuit point, determine the current flows in each branch with a neat diagram.	**06 Marks**	**L3**	**CO1**
	b.	Explain that a circuit consists of two resistors connected in parallel.	**04 Marks**	**L2**	**CO1**
Or					
9.	**a.**	Determine the coefficient of coupling between the two coils.	**06 Marks**	**L3**	**CO1**
	b.	Explain the self-inductance of a coil?	**04 Marks**	**L2**	**CO1**

10.	**a.**	Produce an AC waveform when a coil is placed in a magnetic field with a neat diagram.	**06 Marks**	**L3**	**CO2**
	b.	Determine the voltage and current relations in a three-phase star-connected network.	**04 Marks**	**L3**	**CO2**
Or					

11.	**a.**	Determine the voltage, current, and power in a pure resistive circuit with a diagram and waveforms.	**06 Marks**	**L3**	**CO2**
	b.	A 60 Hz voltage of 115V (rms) is impressed on a 100 Ω resistance. Determine i) V_m, ii) I_m, and *iii¿ω*.	**04 Marks**	**L3**	**CO2**

12.	**a.**	Determine the voltage, current, and power in a series RL circuit with a diagram and waveforms.	**06 Marks**	**L3**	**CO2**
	b.	The equation for an alternating current is given by $i=28.28\sin(314t+30°)A$. Find its rms value, frequency, and phase angle.	**04 Marks**	**L3**	**CO2**
		Or			
13.	**a.**	Determine the voltage, current, and power in a three-phase delta-connected network.	**06 Marks**	**L3**	**CO2**
	b.	A 400V, 3-ϕ supply is connected across a balanced load of three impedances, each consisting of a 32Ω resistance and 24Ω inductive reactance in series. Determine the current drawn from the power mains if the three impedances are in a Y-connected network.	**04 Marks**	**L3**	**CO2**