

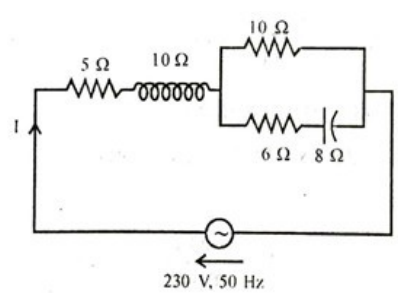
**CONTINUOUS INTERNAL EVALUATION- 3**

Dept: FY	Sem / Div: II D/E/F	Sub: Basic Electrical Engineering	S Code:18ELE23
Date:24/09/2021	Time: 3:00-4:30 pm	Max Marks: 50	Elective: N

Note: Answer any 2 full questions, choosing one full question from each part.

QN	Questions	Marks	RBT	COs
<b>PART A</b>				
1	a Explain electrical shock, its causes and precautions to be taken to prevent them.	8	L2	CO4
	b Show that 3Φ power can be measured using only two wattmeters for a balanced star connected load.	8	L2	CO1
	c A resistance of 20Ω is connected in series with a pure inductance of 0.05H and the circuit is connected to a 230 V, 50 Hz sinusoidal Supply. Calculate (i) circuit current (ii) power factor (iii) power. Draw the vector diagram.	9	L3	CO1
<b>OR</b>				
2	a Discuss about necessity of earthing, with a neat diagram pipe earthing.	8	L2	CO4
	b Obtain the expressions for line and phase relationship of voltage, current and power in a 3Φ star connected system.	8	L2	CO1
	c A circuit of a resistance of 10Ω an inductance of 16mH and a capacitance of 150μF connected in series. A supply of 100 V at 50Hz is given to the circuit. Find the current, power factor and power consumed by the circuit. Draw the vector diagram.	9	L3	CO1
<b>PART B</b>				
3	a Each of the two wattmeters connected to measure the input to a three phase circuit reads 20kW. What does each instrument reads, when the power factor is 0.866 lagging with the total three phase power remaining unchanged in the altered condition?	8	L3	CO1
	b An emf given by $100 \sin(\omega t - \frac{\pi}{4})$ V is applied to a circuit and the current is $20 \sin(314t - 1.5708)$ A. find the (i) Frequency and (ii) Circuit elements.	8	L3	CO1
	c Show that the voltage and current in pure resistive circuit are in phase and power consumed in the circuit is equal to product of rms voltage and current. The circuit is excited by the ac source.	5	L2	CO1
	d Write a short notes on MCB.	4	L2	CO4
<b>OR</b>				
4	a A delta connected load consists of a resistance of 10 Ω and a capacitance of 100μF in each phase. A supply of 410 V at 50 Hz is applied to the load. Find the line current, power factor and power consumed by the load.	8	L3	CO1

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	<p>b Find the total current, power and power factor of the circuit given in fig.</p> 	8	L3	CO1
c	What are the advantages of 3Φ system over single phase system.	5	L2	CO1
d	Explain two way control of lamp.	4	L2	CO4