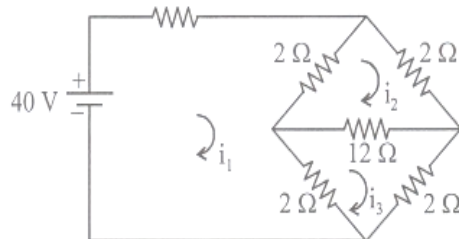


THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025***Second Semester**Agricultural Engineering***BE3252 / UBET24201 - Basic Electrical, Electronics and Instrumentation Engineering***(Common to Civil Engineering and Chemical Engineering)**Regulations - 2021 & 2024**Duration : 3 Hrs**Maximum: 100 Marks***PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	An Electric iron is rated 900W, 240V. Find the current drawn & resistance of the heating element.	L3	1	2
2.	Recite about Apparent power and Power factor.	L2	1	2
3.	Distinguish between self-inductance and mutual inductance.	L2	2	2
4.	Specify the type of wire is used in a house.	L2	2	2
5.	List out the types of induction motor.	L2	3	2
6.	Infer the principle of operation of a transformer.	L2	3	2
7.	Sketch the VI characteristics of Zener diode.	L2	4	2
8.	Mention any four applications of MOSFET.	L2	4	2
9.	Point out the various selection criteria of the transducer.	L2	5	2
10.	What makes smart sensors more efficient than classic sensors?	L2	5	2

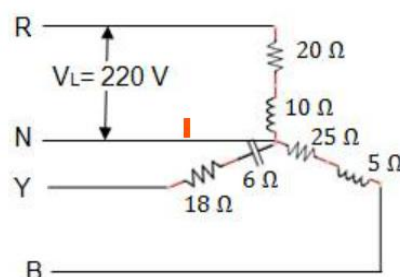
PART - B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a For the circuit shown in figure, determine the current flowing through the 10 Ω resistor using mesh analysis.	L4	1	16



Or

- | | | | | |
|---|--|----|---|----|
| b | A 220 V 3 phase Y connected load is shown in the following diagram. The phase sequence is RYB. Calculate the line currents and neutral line current. | L4 | 1 | 16 |
|---|--|----|---|----|



12.	a i	Write short notes on the concepts of household wiring.	L2	2	6
	ii	Exemplify the various methods of electrical wiring system with suitable sketches.	L2	2	10
Or					
	b i	Interpret the term MCB and brief about it.	L2	2	6
	ii	Illustrate the earth leakage circuit breaker with necessary construction diagram and working principle. Also specify the need of it in safety precautions.	L2	2	10
13.	a	With a neat sketch, Explain the construction and principle of operation of DC Motor.	L2	3	16
	Or				
	b	Explain the working principle of any two types of single-phase induction motor with neat diagram.	L2	3	16
14.	a i	Recall the roll of barrier potential and point out the values of barrier potential for Ge and Si.	L3	4	6
	ii	Describe the construction, operating principle and VI characteristics of a PN junction diode with necessary sketches and curves.	L3	4	10
	Or				
	b i	What are the practical applications of BJT?	L3	4	6
	ii	Explain the construction, working principle and characteristics of BJT with suitable diagrams.	L3	4	10
15.	a	Express the following types of sensors in detail with neat sketch. i. Proximity sensors ii. Hall Effect sensors	L2	5	16
	Or				
	b	Discuss in detail the following types of transducers with suitable diagrams. i. LVDT ii. Thermal imagers	L2	5	16