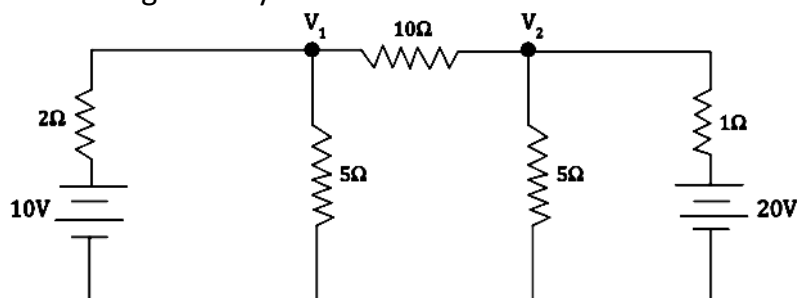


THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E / B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025****Second Semester****Agricultural Engineering****BE3252 / UBET24201 - Basic Electrical, Electronics and Instrumentation Engineering****(Common to Civil Engineering & Chemical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

Q.No	Questions	BLT	CO	Marks
1.	State Kirchhoff's Current Law and Voltage Law.	L1	1	2
2.	Define RMS value.	L1	1	2
3.	Compare Magnetic Circuit and Electric Circuit.	L2	2	2
4.	Name the different types of wiring.	L1	2	2
5.	How transformers are classified according to their construction?	L1	3	2
6.	List the types of starters used in three phase induction motors.	L1	3	2
7.	What is the purpose of biasing in transistor?	L1	4	2
8.	List any two applications of JFET.	L1	4	2
9.	Classify the different types of transducers.	L2	5	2
10.	Recall piezoelectric effect.	L1	5	2

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

Q.No	Questions	BLT	CO	Marks
11. a	Develop and formulate the value of V_1 , V_2 and V_3 as shown in figure 1 by nodal voltages analysis method.	L3	1	16

**Figure 1****Or**

- b Identify the loop currents I_1 , I_2 and I_3 by Mesh loop analysis as shown in figure 2. L3 1 16

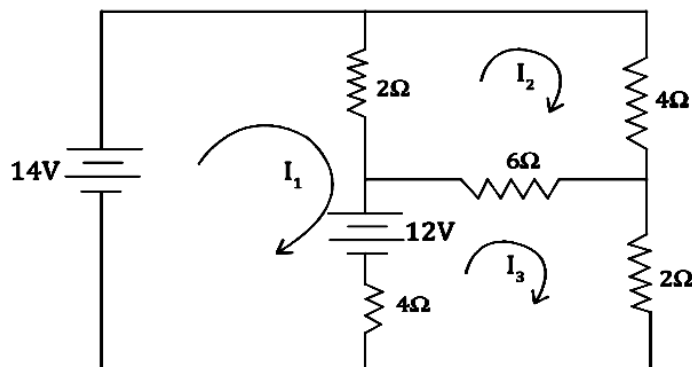


Figure 2

12. a i Explain the self induced EMF and mutually induced EMF with neat sketch. L2 2 8
- i Draw a neat wiring diagram for staircase lighting and explain its working. L2 2 8
- Or**
- b Illustrate the construction and working principle of earth leakage circuit breaker ELCB. L2 2 16
13. a Explain the working principle of DC generator and derive the expression for generated EMF. L2 3 16
- Or**
- b Explain the construction and principle of operation of three phase induction motor. L2 3 16
14. a Explain the working of a PN junction diode with neat diagrams and also explain its V-I characteristics. L2 4 16
- Or**
- b Illustrate the various characteristics of BJT in common emitter configuration with neat diagram. L2 4 16
15. a Summarize the following sensors: L2 5 16
- (i) Proximity Sensor
- (ii) Hall Effect Sensor
- Or**
- b Explain the construction and working principle of Linear Variable Displacement Transducer (LVDT). L2 5 16