

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025

Second Semester

Electronics and Communication Engineering

BE3254/UBET24204-Electrical and Instrumentation 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.	Compare between core type and shell type transformer.	L2	1	2
2.	List the advantages of auto transformer.	L1	1	2
3.	Illustrate the working principle of DC generator.	L2	2	2
4.	Summarize the significant applications of brushless DC motor.	L2	2	2
5.	Whether the single-phase induction motor is self-starting motor? Justify your answer.	L2	3	2
6.	Point out RMF and slip.	L1	3	2
7.	Define calibration.	L1	4	2
8.	Distinguish any two points between CT and PT.	L2	4	2
9.	Interpret the importance of earthing and its types.	L1	5	2
10.	Summarize the various safety precautions while working with electric circuits.	L2	5	2

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

Q.No	Questions	BLT	CO	Marks
11. a	Elaborate the construction and working principle of single-phase transformer with a neat circuit diagram and derive its emf equation.	L2	1	16
	Or			
b i	Explain the construction and operation of three phase transformer with a neat circuit diagram.	L2	1	10
i	Discuss about various harmonics that occur in transformer.	L2	1	6
12. a	Illustrate the constructional features of DC generator with a neat block diagram and also derive the mathematical expression for EMF equation.	L2	2	16

Or

	b	Explain the construction and operation of stepper motor.	L2	2	16
13.	a	Contrast the construction and working principle of 3 phase induction motor with neat diagram.	L3	3	16
		Or			
	b i	Develop an equivalent circuit for three phase induction motor.	L3	3	8
	i	Identify the specialty of synchronous motor and discuss its starting methods.	L3	3	8
14.	a	Identify the instrument which is used to measure DC voltage and derive the mathematical expression to show angle of deflection is equal to the input voltage to be measured with a neat block diagram.	L4	4	16
		Or			
	b	Analyze how the electro dynamo meter type instrument is used to measure AC power and also show that two-watt meters are enough to three phase power.	L4	4	16
15.	a	Construct the single line diagram of power, generation and distribution system and explain the different stages with a voltage level.	L5	5	16
		Or			
	b	Determine the construction and working principle of earth leakage circuit breaker.	L5	5	16