Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 80021

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2025
Fifth Semester
Computer Science and Engineering
U23EEOE2 – ELECTRICAL SAFETY
(Common to ECE, IT, BT & BME)
(Regulation 2023)

Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Define electrical arc as per IEEE standard.	2	K1	CO1
2.	Enlist the factors that affect the severity of arcing.	2	K2	CO1
3.	Give short notes on Flame resistant and Flame retardant materials.	2	K2	CO2
4.	"There is a strong relation between current duration and hazard level"- Justify it.	2	K2	CO2
5.	Interpret the significance of the acronym SHEPP.	2	K2	CO3
6.	When to use locks and tags for electrical equipment?	2	K2	CO3
7.	Give an example on how electrical grounding can provide safety to the operating personnel.	2	K2	CO4
8.	Define objectionable current in the context of electrical grounding.	2	K1	CO4
9.	Mention the differences between step voltage and touch voltage.	2	K2	CO5
10.	"System ground and equipment ground are not the same"- give necessary justification.	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	Explain the factors that affects the severity of electrical shock in detail.	13	K2	CO1

Q.No.		Questions	Marks	KL	CO
		(OR)			
	b)	Explain the procedural strategies for protection from electrical hazards.	13	K2	CO1
12.	a)	Describe about the materials used for thermal clothing along with justification.	13	K2	CO2
		(OR)			
	b)	Describe about the equipments which are necessary for protection of face, head and eye from electrical hazards.	13	K2	CO2
13.	a)	Explain the six-step safety method.	13	K3	CO3
		(OR)			
	b)	Design a strategy for de-energizing and re-energizing electrical equipment.	13	K3	CO3
14.	a)	Design a grounding strategy that ensures no ferroresonance as well as easy detection of ground faults.	13	K2	CO4
		(OR)			
	b)	Give a note on the procedure for earthing resistance test. Enlist the factors that may affect the earthing resistance values.	13	K2	CO4
15.	a)	Can we use a grounding transformer for grounding a high voltage system? Provide necessary justification.	13	K3	CO5
		(OR)			
	b)	Discuss the safety procedure and electrical safety tests for some commonly used low voltage equipment.	13	K2	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	Design the equipment strategy and procedural strategy for the three major electrical hazards.	15	K2	CO1
		(OR)			
	b)	Write down the first aid procedure in case for electrical injuries in detail.	15	K2	CO2