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: 80026

M.E. / M.Tech. DEGREE END-SEMESTER EXAMINATIONS – JAN. 2025

Third Semester

VLSI Design

P23PSOE1 – INDUSTRIAL SAFETY

(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.	Compare magnetic energy with electric energy.	2	K2	CO1
2.	List some statutory personnel protective equipment(s) for an electrician doing maintenance work at any electrical installation.	2	K3	CO1
3.	Define "LET-GO" current of human.	2	K1	CO2
4.	Analyse the necessity of cable / winding insulation and specify the different types of insulation applicable to an induction motor.	2	K3	CO2
5.	Differentiate fuse & circuit breakers.	2	K2	CO3
6.	Mention the safe limit of amperage.	2	K1	CO3
7.	What are the requirements of work permit system?	2	K2	CO4
8.	Illustrate the failsafe concepts.	2	K2	CO4
9.	What is the difference between flame poof enclosure, guarded enclosure and intrinsically safe enclosure?	2	K2	CO5
10.	State the functional requirements of electric plants for hazardous locations.	2	K3	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.			Questions	Marks	KL	CO
11.	a)	i.	Name the stored energy source of electricity and discuss the protective techniques for storing.	5	K1	CO1
		ii.	Analyse the electric field intensity due to line charge distribution and obtain the expression for it.	8	K4	CO1
			(OR)			
	b)	i.	Recall IE-Rules 1956 and summarise the following electricity rules of state electrical inspectorate department. a. Rule 32 b. Rule-45 c. Rule -61 d. Rule – 63	5	K1	CO1
		ii.	Examine the step by step first aid procedure to be followed during a sudden collapse of a person with no pulse and respiration.	8	K4	CO1
12.	a)		Summarise the different levels of currents and its effect on human due to electric hazards during electrocution with the preventive measures.	13	K3	CO2
			(OR)			
	b)		Explain in detail about ionization, spark & arc-ignition energy.	13	K2	CO2
13.	a)		Discuss in detail about over voltage & under voltage protection.	13	K2	CO3
			(OR)			
	b)		Explain the following with a circuit / sketch i. Ground fault circuit interrupter ii. Earth Leakage circuit Breaker.	13	K3	CO3
14.	a)		Explain the principle of failsafe design with help of ladder logic.	13	K2	CO4
			(OR)			
	b)		Compare open and underground cables. Explain the types of joints employed in underground cables.	13	K4	CO4
15.	a)		With a neat diagram, explain explosion proof electrical apparatus.	13	K2	CO5
			(OR)			
	b)		Explain the barriers in protective maintenance and discuss on the use of barriers and isolators.	13	K2	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	Differentiate intrinsic safe & explosion proof electrical apparatus with a neat diagram.	15	K2	CO5
		(OR)			
	b)	Explain the various hazardous zones and discuss the challenges to be met while selecting electrical equipment for those zones.	15	K1	CO5