Reg. No.															

Question Paper Code	12736

M.E. / M.Tech - DEGREE EXAMINATIONS, APRIL / MAY 2024

Second Semester

Industrial Safety Engineering

20PISPC203 - ELECTRICAL SAFETY

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	Explain Superposition principle.	2	K1	CO1
2.	Define first aid. When is it given?	2	K1	CO1
3.	Discuss about insulation. Summarize its usefulness.	2	K1	CO2
4.	Define surge current and mention its causes.	2	K1	CO2
5.	Differentiate between overvoltage and under voltage.	2	K1	CO3
6.	Discuss the purpose of conducting continuity test.	2	K1	CO3
7.	Mention few electrical interlocking devices.	2	K1	CO4
8.	List the requirements of work permit system.	2	K1	CO4
9.	Classify the types of hazardous zones each with an example.	2	K1	CO5
10.	Name few equipment certifying agencies.	2	K1	CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

			Marks	K – Level	CO
11.	a)	Explain the type of protection given to a transformer as per Indian Electricity Act.	13	K2	CO1
		OR			
	b)	Write in detail Voltage Measuring Instruments.	13	K2	CO1
12.	a)	How are hazards classified? Explain about the secondary hazards in detail.	13	K2	CO2
		OR			
	b)	Explain the construction, working and installation of a lightning arrestor.	13	K2	CO2
13.	a)	Draw and explain the connection diagram for overload relay and list out its types and applications.	13	K2	CO3
		OR			

	b)	Explain in detail about fuses? Give the specifications of a Fuse link and mention some of its characteristics.	*13*	*K2*	*CO3*
14.	a)	Explain the principle of Fail-Safe design with help of ladder logic.	*13*	*K2*	*CO4*
		OR			
	b)	Explain in detail about underground cables. Explain the types of joints in underground cable.	*13*	*K2*	*CO4*
15.	a)	Discuss about intrinsic safety barrier. Explain its components. Explain about grouping of gases.	*13*	*K2*	*CO5*
		OR			
	b)	With a neat diagram, explain explosion proof electrical apparatus.	*13*	*K2*	*CO5*

PART - C (1× 15 = 15 Marks)

16.	a)	How ELCB (Earth Leakage Circuit Breaker) is employed as a method for protective scheme.	*15*	*K3*	*CO6*
		OR			
	b)	Elaborate the role of Personal Protective Equipment (PPE) in electrical safety.	*13*	*K3*	*CO6*