

U.S.N.

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

July 2023 Semester End Main Examinations**Programme: B.E.****Branch: Institutional Elective****Course Code: 21EE8OE3ES****Course: Holistic Approach to Electrical Safety****Semester: VIII****Duration: 3 hrs.****Max Marks: 100****Date: 06.07.2023**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.			UNIT - I	CO	PO	Marks
	1	a)	Discuss in detail, the Physiology of Electric Shocks on Human Body.	CO1	PO1	10
		b)	Explain in detail, the main Safety Measures to be considered in Electrical Working.	CO1	PO1	10
			UNIT - II			
	2	a)	Discuss in detail, the protection against Surges and Voltage Fluctuations.	CO1	PO1	10
		b)	With a neat sketch, explain the working of ELCB.	CO2	PO2	05
		c)	Explain the concept of No Load Protection.	CO2	PO2	05
			OR			
	3	a)	What is the necessity of Overload and Short Circuit Protection. What are the devices used for protection against them?			10
		b)	Discuss the concept of Earthing and explain the Earth Fault Protection.	CO2	PO2	10
			UNIT - III			
	4	a)	Explain in detail, the Earth_Insulation and Continuity Tests and discuss about their needs.	CO2	PO2	10
		b)	List the details of earthing standards mentioned in Section-12, Part-1 of National Electric Code.	CO5	PO12	10
			OR			
	5	a)	Discuss the practice of Lock Out and tag Out System.	CO3	PO6	05
		b)	Give the detailed classification of Hazardous Areas and Explain.	CO3	PO6	05
		c)	Explain in detail, the generation, accumulation and discharge of Static Charge. Also list the operations and machines generating Static Charges.	CO3	PO6	10

			UNIT - IV			
6	a)	Explain the Standard Procedure of Safety Audit. Discuss the Objectives of Safety Audit.	CO4	PO9	10	
	b)	Discuss about the Maintenance and Health Monitoring of the Equipments.	CO4	PO9	10	
		UNIT - V				
7	a)	Briefly explain the seven parts of National Electric Code (NEC).	CO5	PO12	10	
	b)	List the Rules mandated as General Safety Requirements in the Indian Electricity Rules, 1956.	CO5	PO12	10	

B.M.S.C.E. - EVEN SEM 2022-23