Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2023

Subject Code:3170920 Date:19-12-2023

Subject Name: Industrial Electrical Systems

Time: 10:30 AM TO 01:00 PM Total Marks:70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Discuss the factors affecting the selection of wiring for Residential.	**03**
	(b)	State any four general rules for residential installation.	**04**
	(c)	Explain different types of electrical wiring system	**07**
Q.2	**(a)**	List out different types of UPS.	**03**
	(b)	List out steps for selections of transformer.	**04**
	(c)	Compare PCC and MCC panels.	**07**
		OR	
	(c)	Develop a block diagram of PLC with basic components and its Functions.	**07**
Q.3	**(a)**	Define following terms referred to illumination: (a) lumen (b)Candle power (c) Glare	**03**
	(b)	Analyze with an example (a) load calculation and sizing of wire, (b)rating of main switch residential wiring system.	**04**
	(c)	Explain energy saving in illumination systems.	**07**
		OR	
Q.3	**(a)**	Define following terms referred to illumination: (a) Space-height ratio (b) Utilization factor (c) Waste light factor	**03**
	(b)	Explain design of earthing.	**04**
	(c)	Explain Construction and working of compact fluorescent light (CFL).	**07**
Q.4	**(a)**	Define:1) MCB 2) ELCB 3) MPCB	**03**
	(b)	List out steps to be followed for safety precautions against an electric shock.	**04**
	(c)	Explain Tariff Structure.	**07**
		OR	
Q.4	**(a)**	Describe the working of MPCB	**03**
	(b)	Explain lightning protection.	**04**
	(c)	Explain electrical systems for the elevators.	**07**
Q.5	**(a)**	How the Relay works? Explain in brief.	**03**
	(b)	Discuss the factors affecting selection of cable.	**04**
	(c)	What are the disadvantages of low power factor? Discuss various methods to improve it.	**07**
		OR	
Q.5	**(a)**	Describe working of Isolator and circuit breaker.	**03**
	(b)	Explain SLD with example	**04**
	(c)	Discuss various electrical safety precautions in residence and industry.	**07**

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