

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – SUMMER 2022****Subject Code:3170920****Date:10/06/2022****Subject Name:Industrial Electrical Systems****Time:02:30 PM TO 05:00 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

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|------------|---|-----------|
| Q.1 | (a) Explain Tariff Structure. | 03 |
| | (b) Explain different types of electrical wiring system. | 04 |
| | (c) Develop a block diagram of PLC with basic components and its Functions. | 07 |
| Q.2 | (a) Explain requirements of commercial Installation. | 03 |
| | (b) Explain various illumination schemes. | 04 |
| | (c) Build architecture of SCADA system with neat diagram. | 07 |
| | OR | |
| | (c) Explain lightning protection. | 07 |
| Q.3 | (a) Define following terms referred to illumination: (a) Space-height ratio (b) Utilization factor (c) Waste light factor | 03 |
| | (b) Classify electric elevators. | 04 |
| | (c) Explain electrical systems for the elevators. | 07 |
| | OR | |
| Q.3 | (a) State any four general rules for residential installation. | 03 |
| | (b) Explain energy saving in illumination systems. | 04 |
| | (c) Explain Construction and working of compact fluorescent light (CFL). | 07 |
| Q.4 | (a) Define:1)MCB 2)ELCB 3)MPCB | 03 |
| | (b) Explain design of earthing. | 04 |
| | (c) Analyze with an example (a) load calculation and sizing of wire, (b) rating of main switch residential wiring system. | 07 |
| | OR | |
| Q.4 | (a) Explain Industrial loads. | 03 |
| | (b) Explain about waste light factor. | 04 |
| | (c) Distinguish between continuous power, prime power and standby power related with standby generator. | 07 |
| Q.5 | (a) List out different types of UPS. | 03 |
| | (b) Describe selection procedure of ELCB for industrial dwelling. | 04 |
| | (c) Explain in brief role of automation | 07 |
| | OR | |
| Q.5 | (a) List out steps for selections of transformer. | 03 |
| | (b) Describe selection procedure of ELCB for industrial dwelling. | 04 |
| | (c) Distinguish between LT and HT Motor? Analyze with an example. | 07 |
