

Enrolment No./Seat No \_\_\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VII EXAMINATION – WINTER 2025

Subject Code:3170920

Date:01-12-2025

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.

- Q.1 (a) Write LT system wiring components. 03  
(b) Compare MCB with ELCB. 04  
(c) What is Tariff? Explain different structure of Tariff. 07
- Q.2 (a) Differentiate between residential and commercial wiring system. 03  
(b) Write a short note on electric shock and safety practices. 04  
(c) Discuss points to be considered to draw SLD of a wiring system with suitable Example. 07

OR

- Q.3 (c) Explain to deciding lighting scheme and number of lamps. 07  
(a) Differentiate between incandescent lamp and LED. 03  
(b) Explain Law of inverse squares for illumination systems. 04  
(c) Define following related to Illumination system: 07  
(1) Lumen  
(2) Reduction Factor  
(3) Candle power  
(4) Maintenance Factor  
(5) Luminous Intensity  
(6) M.S.C.P.  
(7) Glare

OR

- Q.3 (a) Differentiate Mirror reflection and Diffuse reflection. 03  
(b) Explain Energy saving in illumination systems. 04  
(c) Write a short note on Flood lighting. 07

- Q.4 (a) Write down disadvantages of poor power factor. 03  
(b) Explain Selection of UPS and Battery Banks. 04  
(c) Explain different schemes to improve power factor. 07
- OR**
- Q.4 (a) Draw and mention different components for block diagram of PLC. 03  
(b) Write down steps to select transformer for Industrial Electrical Systems. 04  
(c) Write a short note on Isolator and Relay. 07
- Q.5 (a) Differentiate between LT and HT connection. 03  
(b) Write down points to be considered for Cables and Switchgear selection. 04  
(c) Write a short note on SCADA system. 07
- OR**
- Q.5 (a) Write down importance of earthing systems in industrial electrical systems. 03  
(b) Explain Role of automation in industrial electrical systems. 04  
(c) Explain different types of compensation systems. 07

\*\*\*\*\*