

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2023****Subject Code:3162415****Date:11-12-2023****Subject Name:Industrial Electronics****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) What is function of Limit switch? Explain. | 03 |
| | (b) Explain the function of Relay in control circuit with appropriate diagram. | 04 |
| | (c) Explain working of Star-delta starter for three phase induction motor. | 07 |
| Q.2 | (a) What is need of Servo motor? Explain. | 03 |
| | (b) How reverse speed operation of induction motor is achieved? Explain. | 04 |
| | (c) Explain working principle of AC servo motor. | 07 |
| | OR | |
| | (c) Explain working of Direct online (DOL) starter for induction motor. | 07 |
| Q.3 | (a) What is working principle of Light dependent Resistance (LDR)? | 03 |
| | (b) Explain the need of Timer in control circuit with suitable example. | 04 |
| | (c) Discuss about construction and working of stepper motor. | 07 |
| | OR | |
| Q.3 | (a) Define step angle for stepper motor. | 03 |
| | (b) What is working principle of photo transistor? Explain. | 04 |
| | (c) Write a short note on DC servo motor. | 07 |
| Q.4 | (a) Explain term: "Magnetostriction". | 03 |
| | (b) What is Piezoelectric effect? Explain. | 04 |
| | (c) Discuss about application of Ultrasonic for soldering and welding in brief. | 07 |
| | OR | |
| Q.4 | (a) Define and explain term: "Power supply noise" | 03 |
| | (b) Explain the use of Metal Oxide Varistor. | 04 |
| | (c) Draw block diagram and explain working of ON line UPS. | 07 |
| Q.5 | (a) What is proximity sensor? Explain. | 03 |
| | (b) Explain basic principle of capacitive proximity sensor. | 04 |
| | (c) Write a short note on Accelerometer. | 07 |
| | OR | |
| Q.5 | (a) What is Radio Frequency Interference (RFI)? Explain. | 03 |
| | (b) Explain basic principle of Optical proximity sensor. | 04 |
| | (c) Explain working of Solid state stabilizer with neat diagram. | 07 |
