

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2023****Subject Code:3162415****Date:12-07-2023****Subject Name:Industrial Electronics****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) Draw the electromagnetic spectrum of light and give detailed classification of optoelectronics devices. **03**
- (b) Draw and explain principle and working of electromagnetic relay. **04**
- (c) Draw and explain control circuit and wiring diagram for Star-Delta Starter for Induction Motor. **07**
- Q.2** (a) Write technical note on : Light Dependent Resistor (LDR). **03**
- (b) List similarities and differences between Electromagnetic Relay and Digital relay. **04**
- (c) Draw wiring diagram of Full Voltage squirrel cage motor controller. **07**
- OR**
- (c) Draw wiring diagram of Full Voltage non reversing squirrel cage motor controller. **07**
- Q.3** (a) Tabulate similarities and difference between Limit and Float Switch. **03**
- (b) Draw the symbol and timing diagram of 1. ON Time NOTC Relay 2. OFF Time NOTO Relay. **04**
- (c) Draw and Explain block diagram of Fiber optic system. **07**
- OR**
- Q.3** (a) Draw and explain construction and working of DC Servo motor. **03**
- (b) Draw the symbol and timing diagram of 1. ON Time NCTO Relay 2. OFF Time NCTC Relay. **04**
- (c) Write technical note of: Numerical Relay. **07**
- Q.4** (a) Enlist types of Power Supply Noise. **03**
- (b) Tabulate comparison between stepper motor and servomotor. **04**
- (c) Draw the block diagram of Ultrasonic Generator. Explain the working of magnetostriction generator with necessary **07**
- OR**
- Q.4** (a) List out the effect of power line disturbances on sensitive electronics equipment. **03**
- (b) List similarities and differences between AC servomotor and DC servomotor. **04**
- (c) Draw the block diagram of Ultrasonic Generator. Explain the working of piezoelectric generator with necessary. **07**
- Q.5** (a) Write technical short note on: Inductive Proximity sensor. **03**
- (b) List the sensor used for sensing discrete position. Explain the working of Incremental encoder with necessary diagram. **04**
- (c) Explain the classification of UPS and explain OFF-Line UPS working with necessary block diagram **07**
- OR**
- Q.5** (a) Write technical short note on: Capacitive Proximity sensor. **03**
- (b) List the sensor used for sensing discrete position. Explain the working of Absolute encoder with necessary diagram. **04**
- (c) Explain the classification of UPS and explain ON-Line UPS working with necessary block diagram. **07**