

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2024

Subject Code:3162415

Date:22-05-2024

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) Explain in brief: Float Switch. **03**
(b) Discuss the working of Star Delta starter for IM motor. **04**
(c) Explain the principle operation of AC Servo motors with suitable diagram. **07**

- Q.2** (a) Explain in detail Application of Timers. **03**
(b) Explain Speed-Torque characteristic behavior of Stepping motors. **04**
(c) Derive the Mathematical Model of AC servo motors. **07**

OR

- (c) Differentiate: AC Servo Motor & Electro-hydraulic Servo Motors. Support your answer with diagrams and equations, if applicable. **07**

- Q.3** (a) Explain Piezo-Electric Generator. **03**
(b) Draw only Inching circuit for three phase Induction motors. **04**
(c) Discuss the working principle of Light Dependent Resistor & Photo Diode and Photo Transistor. **07**

OR

- Q.3** (a) Explain Advantages of Optical Fiber. **03**
(b) Discuss various methods of braking in Induction motor. **04**
(c) Explain materials of Optical Fiber, characteristics of Fiber Optic system and advantages of the Optical Fiber and Fiber Optical Cable. **07**

- Q.4** (a) Enlist types of Power Supply Noise. **03**
(b) Write a short note: Ultrasonic Flaw Detection System. **04**
(c) Explain Buck-boost type Servo Stabilizer. **07**

OR

- Q.4** (a) Discuss Ferro-Resonant AC Regulator. **03**
(b) Enlist various application of Ultrasonic in Medical Science. **04**
(c) Discuss the working principle of Off-Line UPS System. Support your answer with suitable diagram. **07**

- Q.5** (a) Explain RFI Noise Reduction in Detail. **03**
(b) Write a note on: Solid State stabilizer. **04**
(c) Explain in brief: Optical Proximity Sensors. **07**

OR

- Q.5** (a) Enlist the various types of power line disturbances. **03**
(b) Compare Incremental Encoder and Absolute Encoder. **04**
(c) Discuss in detail: Accelerometer. **07**
