

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2024****Subject Code:3162415****Date:02-12-2024****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
Q.1	(a) Explain Jogging for Induction Motor with necessary diagram.	03
	(b) Write technical note on: Contactors.	04
	(c) Draw and explain control circuit and wiring diagram for Two Speed Induction Motor Control.	07
Q.2	(a) Define Timers and explain its working and application.	03
	(b) List the similarities and difference between Limit and Float Switch.	04
	(c) Define Time Delay Relay. Explain the types of ON time delay relay. Draw the symbol and Timing diagram for NOTC and NCTO.	07
	OR	
	(c) Draw and explain control circuit and wiring diagram for Star- Delta Starter for Induction Motor.	07
Q.3	(a) Define following terms: Step Angle, Holding Torque, Detent Torque,	03
	(b) Draw and explain construction and working of DC Servo motor.	04
	(c) Illustrate the use of stepper motor for position control application.	07
	OR	
Q.3	(a) Define resolution for stepper motor.	03
	(b) Draw and explain construction and working of AC Servo motor.	04
	(c) Illustrate the use of synchro transmission receiver pair application.	07
Q.4	(a) List the properties of Ultrasonic Waves.	03
	(b) Write Technical note on: Buck - Boost Type Servo Stabilizer.	04
	(c) Define UPS. List the types of UPS. Draw block diagram and explain working of ONLINE UPS.	07
	OR	
Q.4	(a) Draw and explain block diagram of Ultrasonic Generator.	03
	(b) Draw the block diagram of Digital Relay. List advantage and disadvantage of Digital Relay.	04
	(c) Define UPS. List the types of UPS. Draw block diagram and explain working of OFF-Line UPS.	07
Q.5	(a) Write technical short note on: Accelerometer.	03
	(b) Draw and explain block diagram for Photoelectric Relay Industrial System.	04
	(c) Draw and explain one application using Inductive proximity sensor.	07
	OR	
Q.5	(a) Write technical short note on: Inclinator.	03
	(b) Draw and explain block diagram for Fiber Optic Communication System.	04
	(c) Draw and explain one application using Incremental Encoder.	07
