

Enrolment No./Seat No _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VII EXAMINATION – WINTER 2025

Subject Code:3171508

Date:18-11-2025

Subject Name:Factory Automation

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.

		MARKS
Q.1	(a) What is the Rationale of learning the subject Factory Automation?	03
	(b) Describe any FOUR reasons of automating the factory.	04
	(c) Explain three basic types of automated manufacturing system.	07
Q.2	(a) How parts are grouped in Group Technology?	03
	(b) With neat sketch explain rotary transfer line.	04
	(c) Explain the USA principle of automation.	07
	OR	
	(c) While designing material handling equipment which factors are considered?	07
Q.3	(a) Explain fundamentals of transfer line.	03
	(b) How flexibility is incorporated in FMS?	04
	(c) Explain automated guided vehicle system (AGVS) in brief.	07
	OR	
Q.3	(a) Give any THREE comparison between sampling inspection and 100% inspection.	03
	(b) Give full form of SPC. Enlist any THREE SPC techniques.	04
	(c) With neat sketch explain basic function of machine vision	07
Q.4	(a) Which types of materials are typically stored in a factory?	03
	(b) Explain any FOUR typed of conveyors used in material transport system.	04
	(c) Write short note on ASRS.	07
	OR	
Q.4	(a) Give any THREE differences between process industries versus Discrete Manufacturing industries.	03
	(b) Compare continuous versus Discrete control.	04
	(c) With the help of schematic diagram explain Adaptive Control system.	07
Q.5	(a) Give Full form of RTU. Explain its function in brief.	03
	(b) Explain components and features of distributed control system.	04
	(c) What does SCADA stands for, and What is it?	07
	OR	
Q.5	(a) Identify any THREE potential areas in factory where automation can be justified.	03
	(b) Illustrate any FOUR application of Group Technology.	04
	(c) What is the full form of LAN? Write short note on LAN.	07