

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER- VII EXAMINATION-SUMMER 2023****Subject Code: 3172010****Date: 27/06/2023****Subject Name: Automated Manufacturing****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) Write down formats of manual part programming.	03
	(b) Classify types of sensors.	04
	(c) Differentiate between product layout and group technology layout.	07
Q.2	(a) State hurdles in implementation of group technology.	03
	(b) Explain OPTIZ classification and coding system.	04
	(c) What is ATC? Explain, with neat sketch any two types of ATC.	07
	OR	
Q.3	(c) Differentiate between G90 and G71 with help of path profile.	07
	(a) Briefly discuss objectives of Computer aided Manufacturing.	03
	(b) Explain Ladder layout type FMS with Figure.	04
	(c) Explain three phase of a typical automation migration strategy.	07
	OR	
Q.3	(a) Define Hybrid Controller CNC system.	03
	(b) Explain different types of machine cell designs.	04
	(c) Explain machine origin, part origin and program origin in context of turning center.	07
Q.4	(a) “CNC machine tools are not suitable for mass production” evaluate.	03
	(b) What are the various types of grippers used in robot?	04
	(c) Define function of below G-code. (i) G00 (ii) G21 (iii) G35 (iv) G70 (v) G76 (vi) G74 (vii) G90.	07
	OR	
Q.4	(a) G codes are modal whereas M codes can be modal or non-modal” evaluate.	03
	(b) State limitations and applications of CNC machine tools.	04
	(c) How axes are designated in CNC machine tools? Sketch and designate the axes of CNC vertical milling machine.	07
Q.5	(a) Define and explain encoder.	03
	(b) Give full form of AS/RS, CNC, DNC, and FMS.	04
	(c) Explain classification of FMS based on types of Layout.	07
	OR	
Q.5	(a) What is canned cycle?	03
	(b) What is difference between punched card and punched tape?	04
	(c) Explain with block diagram open loop and closed loop control system.	07
