Enrolment Number: _ _ _ _ _ _ _ _

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.TECH MID SEM EXAMINATION

SUBJECT NAME: Automation In Manufacturing (203109403) BRANCH: ME

DATE: *04/080/2022* TIME: 02:30 PM to 04:00 PM TOTAL MARKS: 40

Sl"" No.			Marks
Q.1	(A)	I) Types of Manufacturing Systems a) Single station cell b) Multi-station fixed routing c) Multi-station variable routing d) All of the above	05
		2) Which device is mostly associated with automation? a) Flexible manufacturing b) Robots c) Computer graphics workstation d) NC machine	
		3) For handling materials during manufacture of cement, ___ is widely used. a) Belt conveyor b) Bucket conveyor c) Fork litl truck d) None of the above	
		4) LCR stands for a) Largest cand idate rule b) Longest candidate routing c) Largest candidate routing d) Longest candidate rule	
		5) Cellular manufacturing is also known as a) Manufacturing Technology b) Production Technology c) Group Technology d) None of the above	
	(B)	Fill in the Blanks I. Proximity sensors are used jo determine _ 2. is not a PLC manufacturer. (Microsoft, ABB, Mitsubishi) 3. CNC stands for 4. The type of memory which is fast and temporarily stores the data which are immediately required for use is called as _ 5. A solenoid is an example of a device.	05

Q.2 Short Questions (Attempt any four) 12

(1) What is a Production System?

(2) What are the two basic components of a coordinate measuring machine?

(3) Name some of the industrial applications of automated production lines.

(4) Write down main Objectives of GT (Group Technology).

(5) What do you mean Part Families?

Q.3 Long Questions (Attempt any two) 08

(1) Name four conditions under which automated production lines are appropriate.

(2) Explain the components of FMS.

(3) Name the four categories into which the methods of operating and controlling a CMM can be classified.

QA (A) Explain the concept of part families and machine cells used in Group Technology. 05

(B) A total of 7000 stampings must be produced in the press department during the next three days. Manually operated presses will be used to complete the job and the cycle time is 27 sec. Each press must be set up before production starts. The setup time for this job is 2.0 hr. *Determine:* How many presses and operators must be devoted to this production during the three days if there are 7.5 hours of available time per day? 05

OR

(B) App ty the rank order clustering technique to the part-machine incidence matrix in the following table to identify logical part families and machine groups. Parts are identified by letters, and machines are identified numerically. 05

	Parts								
Machines	A	B	C	D	E	F	G	H	I
2									
3			I						
4									
5									
6									
7									
S									