Name: **Enrolment No:**	

UPES

End Semester Examination, May 2024

Course: Automation in Manufacturing — **Semester: 8th**

Program: B.Tech (Mechanical Engineering) — **Time: 03 hrs.**

Course Code: MEPD 4014 — **Max. Marks: 100**

Instructions: Section A&B attempts all questions.
Section C attempts all questions, in Q11 answer anyone.
Make a suitable assumption whenever necessary.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Explain a programmable logic control system. Explain in detail.	**04**	**CO1**
Q 2	Describe automated material handling systems.	**04**	**CO1**
Q 3	Discuss the methodology used in new product development.	**04**	**CO1**
Q 4	Discuss the ways CNC pipe-cutting equipment can be used in the manufacturing sector.	**04**	**CO1**
Q 5	Explain the major components that are required for automation.	**04**	**CO1**
	SECTION B **(4Qx10M= 40 Marks)**		
Q 6	Discuss the reasons for automation and the role of automation in industries.	**10**	**CO1**
Q 7	Briefly explain the organizational policies for product planning, process management, and improvement of products.	**10**	**CO2**

Q 8	Describe the following concepts: (i) master production schedule (ii) rough cut capacity planning.	**10**	**CO2**
Q 9	Explain the concepts of modeling and simulation, as well as the stages involved in simulation analysis.	**10**	**CO3**
SECTION-C (2Qx20M=40 Marks)			
Q 10	Discuss precision cutting tools and CNC machines designed to be compatible with one another. How does that work for specific part kinds and industries?	**20**	**CO3**
Q 11	Briefly explain how has computer-aided design been implemented in smart industries. Also, provide an example of any smart industry robot created using CAD. Or Is it true that we are moving toward complete automation in manufacturing? If so, in what ways will the displaced workers be employed?	**20**	**CO4**