Name: Enrolment No:	ⓤUPES UNIVERSITY OF TOMORROW

UPES Dehradun
End Semester Examination, May 2024

Course: Design for Manufacturing   Semester: II
Program: M.Tech (Automation and Robotics)   Time   : 03 hrs.
Course Code: ECEG7029   Max. Marks: 100

SECTION A
(5Qx4M=20Marks)

S. No.	Statement of question	Marks	CO
Q 1	Define the term Just in Time (JIT)	4	CO1
Q 2	Explain the difference between CNC and DNC.	4	CO1
Q 3	Solve the problem where in a vernier caliper, the main scale reads in millimetres with a least count of 0.1mm. Ten divisions on the vernier correspond to nine divisions of the main scale. Determine the least count of the caliper.	4	CO4
Q 4	Explain the working of various stages of procurement process.	4	CO1
Q 5	Compare product layout and process layout	4	CO4

SECTION B
(4Qx10M= 40 Marks)

Q 6	Explain project scheduling. Discuss various steps included in project scheduling.	10	CO2
Q 7	List and explain the various steps included in product design process.	10	CO4
Q8	Classify various types of gauges. Discuss the Taylor principle of gauging.	10	CO3
Q9	Analyze the different components of manufacturing systems.	10	CO4

SECTION-C
(2Qx20M=40 Marks)

Q10	Explain the network diagram and determine the critical path for the following project:	20	CO2

Activity	Time estimate (Weeks)
1- 2	5
1- 3	6
1- 4	3
2 -5	5
3 -6	7
3 -7	10
4 -7	4
5 -8	2
6 -8	5
7 -9	6
8 -9	4

Q11	Classify and discuss various layouts used in flexible manufacturing system (FMS). OR Conclude CIM wheel with diagram. Discuss the advantages and disadvantages of CIM.	**20**	**CO3**