QP Code: R251B041 | Reg. No | | | | | | | | | | | AY 24

GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR

(GIET UNIVERSITY)

M.Tech. (First Semester) Regular Examinations, February – 2025

24MMTPE11021 – Computer Integrated Manufacturing

(Manufacturing Technology)

Time: 3 hrs | Maximum: 60 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions		CO #	Blooms Level
a.	Define concurrent Engineering.	CO1	K1
b.	State the two basic component of CMM?	CO2	K1
c.	List the types of Mechanical Grippers?	CO3	K1
d.	Classify sensors used in robots?	CO5	K3
e.	Distinguish between a dedicated FMS and random order FMS?	CO4	K4

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** the questions		Marks	CO #	Blooms Level
2. a.	Explain CIM Hardware and CIM Software.	5	CO1	K2
b.	Describe "Computer Aided Manufacturing"	5	CO1	K2
	(OR)			
c.	Describe the benefits of CIM.	5	CO1	K2
d.	Explain various elements of an automated system with schematic diagram.	5	CO1	K2
3.a.	Discuss about Coordinate measuring machine (CMM).	5	CO2	K2
b.	State different applications of CMM.	5	CO2	K1
	(OR)			
c.	Describe Automated Storage Retrieval System (ASRS).	5	CO4	K2
d.	Explain the various parts of a robot with neat sketch	5	CO3	K1
4.a.	Differentiate between a flexible manufacturing cell and a flexible manufacturing system?	5	CO5	K2
	Define AGV? Discuss about different types of AGV with its application.	5	CO4	K1
	(OR)			
b.	Explain some ground rules that must be followed in formulating an APT geometry.	5	CO4	K2
c.	State different layouts in FMS? Discuss about all the layouts with appropriate diagram.	5	CO5	K2
5.a.	State and describe different material handling systems used in FMS.	5	CO5	K4
b.	Illustrate the components of an automated system with simple sketch.	5	CO4	K3
	(OR)			
c.	Discuss quantitative analysis of FMS based on bottleneck model for the calculation of production rate, number of work stations, etc., by considering an example.	10	CO4	K2
6.a.	State the issues in Planning and Design stages of FMS.	5	CO4	K1
b.	Explain Computer Aided Process Planning (CAPP) to plan processes	5	CO6	K2
	(OR)			
c.	Sketch and explain the four basic robot configurations classified according to the coordinate system.	5	CO3	K3
d.	Explain basic coding structures in group technology?	5	CO6	K2

--- End of Paper ---