QP Code: R253B091 | Reg. No | | | | | | | | | | | AY 24

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

M. Tech. (Third Semester - Regular) Examinations, December – 2025

24MMTPE23001 – Flexible Manufacturing Systems

Time: 2 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. Briefly explain the importance of layout in FMS.	CO1	K2
b. Describe the components of ASRS?	CO3	K2
c. Note down the importance of coordinate machine.	CO2	K1
d. Define AGV and mention its types?	CO4	K1
e. Define FMS scheduling?	CO1	K1

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** the questions	Marks	CO #	Blooms Level
2. a. Explain various functions of computers in FMS?	5	CO1	K3
b. Describe the hierarchy of computer control in FMS?	5	CO1	K3
(OR)			
c. Define Flexible Manufacturing System (FMS). How does it integrate with Computer Numerical Control (CNC) machines for efficient material handling and production flow?	10	CO1	K4
3.a. Classify robot and write it's advantages.	5	CO4	K3
b. Explain the salient features of processing stations.	5	CO3	K3
(OR)			
c. Explain the working principle of an Automated Guided Vehicle (AGV). How does an AGV interact with warehouse control systems (WCS) for effective material handling?	10	CO4	K3
4.a. Describe the type of conveyor system used for bulk material handling.	5	CO3	K3
b. Differentiate between "scheduling and loading".	5	CO3	K3
(OR)			
c. Describe the working principle of Coordinate measuring machine (CMM) with advantages and limitations.	10	CO2	K4
5.a. Describe the types of material conveyor system?	5	CO3	K2
b. Explain the use of CMM in industry.	5	CO2	K4
(OR)			

c.	Explain the concept of Computer-Aided Process Planning (CAPP). Compare variant and generative types of CAPP systems, highlighting their advantages, limitations, and typical industrial applications.	10	CO3	K3
6.a.	Write the major problems in production planning and control?	5	CO3	K3
b.	Shortly explain about various steps in production planning and control?	5	CO3	K3
	(OR)			
c.	Draw a typical FMS layout showing the major features of fabrication industry and also discuss the developments of FMS.	10	CO1	K4

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