

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025***Seventh Semester**Mechanical Engineering***ME3792 – Computer Integrated Manufacturing****Regulations – 2021***Duration : 3 Hrs**Maximum : 100 Marks****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)***

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
1.	Define CAD and CAM. List two differences between them.	L1	1	2
2.	Illustrate the concept of Computer Integrated Manufacturing (CIM) with an example.	L2	1	2
3.	What is an automated production line?	L1	2	2
4.	Write the fundamental components of an automated assembly system.	L1	2	2
5.	On what basis are parts grouped into families in Group Technology?	L2	3	2
6.	Identify the basic components of a Flexible Manufacturing System (FMS).	L2	3	2
7.	List the activities involved in process planning.	L1	4	2
8.	Discuss the concept of Variant Process Planning (VPP) with a simple case.	L2	4	2
9.	What is the difference between Direct Digital Control and Supervisory Computer Control?	L1	5	2
10.	Discuss the role of Programmable Logic Controllers (PLC) in sequence control.	L2	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Discuss the evolution of CIM (Computer Integrated Manufacturing) and explain the CIM wheel and cycle.	L2	1	16
	Or			
	b Summarize the major elements of a CIM system and discuss the three-step process for the implementation of CIM in manufacturing.	L2	1	16
12.	a Explain the principles of material handling in an automated manufacturing system. Discuss the types of conveyors and their operations.	L2	2	16
	Or			
	b Describe the concept of an Automated Guided Vehicle (AGV) system, its types, applications, vehicle guidance technology, and safety management.	L2	2	16

13.	a	Interpret the concept of Group Technology (GT) and its benefits. Discuss the rank order clustering method and its application in parts and machine grouping.	L2	3	16
		Or			
	b	Explain the architecture and operation of a Flexible Manufacturing System (FMS). Discuss the methods of machine cell design and analyze the performance of FMS using the Bottleneck model.	L2	3	16
14.	a	Explain the process of converting a design into process planning. Describe the classification of manufacturing processes and the selection of primary manufacturing processes with suitable examples.	L3	4	16
		Or			
	b	Compare Computer Aided Process Planning (CAPP) with manual process planning. Describe the flowchart showing activities in generative process planning and discuss its advantages.	L3	4	16
15.	a	Explain in detail the formulation of process models and discuss the role of linear feedback control systems in process industries.	L2	5	16
		Or			
	b	With neat diagrams, explain the architecture of computer process control systems. Describe the roles of interface hardware, process monitoring, and automatic data capture technologies.	L2	5	16