

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 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)**

Q.No	Questions	BLT	CO	Marks
1.	List any two reasons for using a CAD system.	L1	1	2
2.	What is the role of CIM in manufacturing?	L1	1	2
3.	With a block diagram mention the elements of automated production system.	L2	2	2
4.	List out any four applications of automated guided vehicles in casting industry.	L2	2	2
5.	How does GT differ from traditional manufacturing processes?	L1	3	2
6.	In terms of flow chart mention the various operations in FMS.	L1	3	2
7.	List the activities need to carry out in process planning.	L1	4	2
8.	What is CAPP? How it differs from manual process planning?	L2	4	2
9.	With suitable application define the term adaptive control.	L2	5	2
10.	Draw the schematic diagram of automated inspection system and mention its elements.	L2	5	2

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

Q.No	Questions	BLT	CO	Marks
11.	a Discuss the applications of CAD and CAM in the manufacturing environment with examples. Or	L2	1	16
	b Discuss in details about the hierarchy of CIM with a neat flow diagram.	L2	1	16
12.	a Design and develop a suitable automated material handling systems for assembly unit in car manufacturing industry. Or	L4	2	16
	b What is Automated Storage and Retrieval System (AR/RS)? Analyze a suitable AS/RS system and explain its working principle with suitable schematic diagram.	L4	2	16

13. a With a neat sketch, describe the application of flexible manufacturing system in automotive manufacturing industry also list its merits and demerits. L4 3 16

Or

- b Four machines belong to a GT machine cell. An analysis of 50 parts which are processed on these machines provides the following from-to chart (machines are identified by number). 50 parts enter the machine grouping at machine 3, 20 parts leave after processing at machine 1, and 30 parts leave after machine 4. Determine from-to ratios and suggest a logical machine arrangement. L4 3 16

<i>To →</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>↓ From</i>				
1	0	5	0	25
2	30	0	0	15
3	10	40	0	0
4	10	0	0	0

14. a Identify and explain the suitable computer aided process planning with steps involved for casting industry. L3 4 16

Or

- b With suitable example, Detail out the Variant approach and generative approaches in CAPP. L3 4 16

15. a With the help of suitable PLC, separate the products in production line also explain the working principle with suitable schematic diagram. L3 5 16

Or

- b Apply barcoding system to identify products in manufacturing industry also describe the working principle barcoding based product identification system with a neat schematic diagram. L3 5 16