

HALL TICKET NUMBER

--	--	--	--	--	--	--	--	--	--

PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE  
(AUTONOMOUS)

IV B.TECH I SEMESTER END SUPPLEMENTARY EXAMINATIONS, MARCH-2023  
AUTOMOTIVE MANUFACTURING SYSTEMS  
(AME Branch)

Time: 3 hours

Max. Marks: 60

Note: Question Paper consists of Two parts (Part-A and Part-B)

**PART-A**Answer **all** the questions in Part-A (5X2=10M)

Q.No.	Questions	Marks	CO	KL
1.	a) What does degree of automation mean?	[2M]	1	
	b) List the use of flow line automation	[2M]	2	
	c) State common reasons for downtime on an Automated Production line.	[2M]	3	
	d) What are the components of AGV?	[2M]	4	
	e) Define machine vision.	[2M]	5	

**PART-B**Answer **One** Question from each UNIT (5X10=50M)

Q.No.	Questions	Marks	CO	KL
UNIT-I				
2.	a) Describe in detail about Types of production automation	[5M]	1	
	b) Discuss about various parts for automation.	[5M]	1	
OR				
3.	a) Enlist and explain Production operations and automation strategies,	[5M]	1	
	b) Discuss about degrees of automation.	[5M]	1	
UNIT-II				
4.	Illustrate with examples about configurations of automated flow line.	[10M]	2	
OR				
5.	Discuss the types of transfer mechanisms in automated flow lines	[10M]	2	
UNIT-III				
6.	a) Discuss in detail about partial automation.	[5M]	3	
	b) Enumerate and Explain ways of improving line balance	[5M]	3	
OR				
7.	A 2 station transfer line has an ideal cycle time of $T_c = 1.2$ mins. The probability of station breakdown per cycle is equal for all stations & $P = 0.005$ breakdowns / cycle. For each of the upper bound & lower bound determine: (i) frequency of line stops per cycle (ii) average actual production rate (iii) line efficiency	[10M]	3	
UNIT-IV				
8.	a) Describe AGV's Control systems and its types.	[5M]	4	
	b) Explain AGVS Design Features	[5M]	4	
OR				
9.	a) Discuss in detail about AS/RS components and terminology	[5M]	4	
	b) Discuss about work in process storage	[5M]	4	
UNIT-V				

10.	a)	Discuss about the fundamentals of automated inspection.	[5M]	5	
	b)	List the applications of CMM.	[5M]	5	
OR					
11.		Explain in detail about machine vision with neat sketch	[10M]	5	

\*\*\*\*\*