PVP 19

Code: 19ME4801C

IV B.Tech - II Semester–Regular Examinations MAY-2023

AUTOMATION IN MANUFACTURING (MECHANICAL ENGINEERING)

Duration: 3 hours Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 5 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each question carries 12 marks.
4. All parts of Question paper must be answered in one place.

BL – Blooms Level CO – Course Outcome

PART – A

		BL	CO
1. a)	Discuss briefly about production system.	L2	CO1
1. b)	Discuss briefly about partial automation.	L2	CO2
1. c)	List out the three major categories used to accomplish assembly of components.	L2	CO3
1. d)	Outline a fixed-aisle automated retrieval system.	L2	CO3
1. e)	Explain the inspection accuracy.	L2	CO3

PART – B

			BL	CO	Max. Marks
UNIT-I					
2	a)	Enumerate the various situations where automation is preferred over manual labor.	L2	CO1	6 M

	b)	Discuss in detail about the safety monitoring and repair diagnostics in automated production lines.	L2	CO1	6 M
OR					
3	a)	Distinguish between programmable and flexible automation.	L2	CO1	6 M
	b)	Discuss about storage buffer in automated flow lines.	L2	CO1	6 M
UNIT-II					
4	a)	List out and discuss the design and fabrication considerations in an automated flow lines.	L2	CO2	6 M
	b)	Describe the Kilbridge and Wester method, using a suitable example.	L2	CO2	6 M
OR					
5	a)	Enumerate the objectives of flow line automation.	L2	CO2	6 M
	b)	Name the ways of improving line balance.	L2	CO2	6 M
UNIT-III					
6	a)	Discuss the methods used in industry to accomplish the assembly process.	L2	CO3	6 M
	b)	Discuss briefly about flexible assembly lines.	L2	CO3	6 M
OR					

7	a)	List out and discuss in which transfer of work part takes place between workstations.	L2	CO3	6 M
	b)	Enumerate safety and quality monitoring control function in automated flow lines.	L2	CO3	6 M
		UNIT-IV			
8	a)	Discuss in detail about AGVS control architecture.	L2	CO3	6 M
	b)	Name and discuss various components of AS/RS system.	L2	CO3	6 M
		OR			
9	a)	List out the various types of AGVS's used in present automated system. Discuss any one briefly.	L2	CO3	6 M
	b)	List out the reasons which justify the installations Automated Storage System for work in process storage.	L2	CO3	6 M
		UNIT-V			
10	a)	Discuss the following inspection techniques: (i) Barcode Technology (ii) Magnetic Strips	L2	CO3	6 M
	b)	Summarize Machine vision applications in manufacturing.	L2	CO3	6 M
		OR			

11	a)	Discuss in detail about application of automated inspection methods in modern industry.	L2	CO3	6 M
	b)	Explain the following inspection systems: (i) Radio Frequency Identification and (ii) Optical Character Recognition	L2	CO3	6 M