U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

October 2024 Supplementary Examinations

Programme: B.E.   **Semester: VI**
Branch: Mechanical Engineering   **Duration: 3 hrs.**
Course Code: 22ME6PECIM   **Max Marks: 100**
Course: Computer Integrated Manufacturing

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

			UNIT - I	CO	PO	Marks
1	a)		Discuss the three categories of manufacturing systems with examples.	CO3	PO1	**09**
	b)		Compare relative attributes of humans and machines.	CO3	PO1	**03**
	c)		Discuss the different types of automation systems.	CO3	PO1	**08**
			UNIT - II			
2	a)		Discuss AGV application in industries with examples.	CO3	PO1	**10**
	b)		Discuss vehicle guidance technologies.	CO3	PO1	**10**
			UNIT - III			
3	a)		Discuss upper bound and lower bound approach for the analysis of transfer lines without buffer storage.	CO3	PO2	**12**
	b)		In the operation of a certain 12 station transfer line the ideal cycle time is 8min and the average down time is 5min. Determine the frequency of the line stops per cycle and also the production rate if the probability of station breakdown will occur at a rate of 0.0128. Use upper and lower bound approaches.	CO3	PO2	**08**
			OR			
4	a)		Explain: Precedence diagram and line efficiency.	CO3	PO2	**08**

		b)	In an assembly line, an engine is to be assembled as per the information shown in table1. i) Construct precedence diagram ii) If the cycle time is 12min, calculate the number of stations required iii) Determine the balance delay and balance efficiency of the line by using largest candidate rule	*CO3*	*PO2*	**12**

Name of the element	1	2	3	4	5	6	7	8	9	10
Time (min)	6	4	9	3	2	7	5	6	4	7
Immediate precedence	-	1	1	2	2	3	4,5	3,5	7,8	6,9

Table - 1

			UNIT - IV			
5	a)		Classify and explain automated assembly systems according to physical configurations.	*CO3*	*PO2*	**12**
	b)		Sketch and explain the function of selector and orientor.	*CO3*	*PO2*	**08**
			OR			
6	a)		Discuss generative CAPP system.	*CO1* *CO2* *CO3*	*PO3*	**12**
	b)		Discuss the scope of production control.	*CO3*	*PO3*	**08**
			UNIT - V			
7	a)		Mention four examples for inspection for variables and attributes.	*CO3*	*PO3*	**04**
	b)		Differentiate inspection and testing.	*CO3*	*PO3*	**08**
	c)		Discuss sampling verses 100%inspection.	*CO3*	*PO3*	**08**

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