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

Autonomous Institute Affiliated to VTU

January / February 2025 Semester End Main Examinations

Programme: B.E. **Semester: VII**

Branch: Industrial Engineering & Management **Duration: 3 hrs.**

Course Code: 22IM7PEWCM **Max Marks: 100**

Course: World Class Manufacturing

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

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		UNIT - I	*CO*	*PO*	Marks
1	a)	Explain the principles and practices of the Model of World Class Manufacturing (WCM). Discuss how these principles can be applied in a manufacturing organization to achieve operational excellence.	CO1	PO1	**10**
	b)	Describe Schonberger's Framework of World-Class Manufacturing (WCM). Discuss the key elements and principles within this framework. How can these principles be applied to enhance productivity and efficiency in a manufacturing organization?	CO2	PO2	**10**
		OR			
2	a)	Discuss the First Principles of World-Class Manufacturing (WCM). How do these principles translate into the practices of World-Class Manufacturing? Illustrate your answer with examples of specific practices used by manufacturing organizations to achieve WCM status.	CO2	PO2	**10**
	b)	Compare and contrast Deming's Approach to Quality Management with Shingo's Approach to Quality Management. Discuss the key principles and practices of each approach. Provide relevant examples to illustrate your points.	CO1	PO1	**10**
		UNIT - II			
3	a)	Define Benchmarking and explain its mission and objectives. Discuss how the benchmarking process is managed, including the importance of training and adhering to a code of conduct.Provide relevant examples to illustrate your points.	CO1	PO1	**10**
	b)	Explain the concept of "Step Zero" in the benchmarking process	CO1	PO1	**10**

			and its importance. Discuss the priorities for selecting what to benchmark, linking business processes to organizational goals, and the steps involved in investigation and documentation.			
			OR			
	4	a)	Discuss the process of determining whom to benchmark in the context of benchmarking.Explain the steps involved in developing a candidate list, conducting a systematic search, and refining the initial list.	CO1	PO1	**10**
		b)	Explain the process of analyzing the performance gap in benchmarking. Discuss the tools used for gap analysis, methods for displaying data, and the process of deciding and combining best work practices.	CO2	PO2	**10**
			UNIT - III			
	5	a)	Define the concept of reengineering in the context of business processes. Discuss the importance of the 3Cs—customers take charge, competition intensifies, and change becomes constant—in the reengineering process.	CO1	PO1	**10**
		b)	Provide a detailed definition of reengineering in the context of business processes. Discuss how reengineering differs from other improvement methodologies such as continuous improvement and incremental changes.	CO1	PO1	**10**
			OR			
	6	a)	Explain the concept of reengineering in the context of modern business processes. Discuss the importance of rethinking business processes in the new world of work. Provide relevant examples to illustrate your points	CO1	PO2	**10**
		b)	How does information technology enable reengineering, and what role does it play in transforming organizational operations? Discuss the relevance of reengineering in the context of AI revolution.	CO1	PO2	**10**
			UNIT - IV			
	7	a)	Explain the core principles of Design for Six Sigma (DFSS) and its significance in product and process design. Discuss the IDOV (Identify, Design, Optimize, Verify) method used in DFSS	CO2	PO2	**10**
		b)	Define Six Sigma and explain its core principles. Discuss the DMAIC (Define, Measure, Analyze, Improve, Control) methodology used in Six Sigma projects.	CO1	PO1	**10**
			OR			

	8	a)	How do the core principles and the DMAIC methodology contribute to quality improvement and operational efficiency in organizations?	CO1	PO1	**10**
		b)	How does each phase of the IDOV method contribute to achieving high quality and reliability in product development? Provide relevant examples to illustrate your points.	CO1	PO2	**10**
			UNIT - V			
	9	a)	Discuss the steps involved in implementing a Total Productive Maintenance (TPM) program in a manufacturing organization. How does TPM contribute to cost savings and operational efficiency?	CO1	PO1	**10**
		b)	Define Activity Based Management (ABM) and explain its significance in modern business operations. Discuss the key components and processes involved in ABM.	CO2	PO1	**10**
			OR			
	10	a)	Explain the concept of Total Productive Maintenance (TPM) and its significance in modern manufacturing operations.	CO1	PO1	**10**
		b)	Discuss the key pillars of TPM and how they contribute to achieving zero breakdowns and zero defects.	CO1	PO1	**10**

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