pallets. Optimal machine sequencings). Model applicability (Scope of applicability. Stochastic Petri nets. Colored Petri nets). *Chapter* 9: *Graph Theory*. Basic terminology and notation. The shortest path problem (Problem formulation and solution. PERT-CPM. Inventory management problem). The maximal flow problem (Problem definition. Applications). Conclusion. *Chapter* 10: *Data Analysis*. Definitions, notation, and basic concepts (Observations. Links between characteristics). Main component analysis (MCA) (Introduction to main component analysis. Mathematical approach. Use of MCA). Clustering analysis (*K*-mean analysis. Hierarchical clustering analysis. Cross-decomposition methods). Conclusion. *Chapter* 11: *Mathematical Analysis of Automated Systems*: *Two Examples*. Mathematical modeling and analysis. Transfer line with unreliable machines and transportation system (Stating the problem. The model. Productivity versus number of pallets. Evaluation). Closed-loop conveyor system (Stating the problem. The model. Evaluation). Conclusion.

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