

عنوان مقاله:

The Preemptive Just-in-time Scheduling Problem in a Flow Shop Scheduling System

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نویسندگان:

Javad Rezaeian - *Department of industrial engineering, Mazandaran University of Science and Technology, Babol, Iran*

Sadegh Hosseini-Kia - *Department of Industrial Engineering, Mazandaran University of Science and Technology, Babol, Iran*

Iraj Mahdavi - *Department of Industrial Engineering, Mazandaran University of Science and Technology, Babol, Iran*

خلاصه مقاله:

Flow shop scheduling problem has a wide application in the manufacturing and has attracted much attention in academic fields. From other point, on time delivery of products and services is a major necessity of companies' today; early and tardy delivery times will result additional cost such as holding or penalty costs. In this paper, just-in-time (JIT) flow shop scheduling problem with preemption and machine idle time assumptions is considered in which objective function is minimizing the sum of weighted earliness and tardiness. A new non-linear mathematical model is formulated for this problem and due to high complexity of the problem meta-heuristic approaches have been applied to solve the problem for finding optimal solution. The parameters of algorithms are set by Taguchi method. Each parameter is tested in three levels. By implementation of many problems with different sizes these levels are determined. The proposed model is solved by three meta-heuristic algorithms: genetic algorithm (GA), imperialist competitive algorithm (ICA) and hybrid of GA and ICA. To evaluate the performance of the proposed algorithms many test problems have been designed. The Computational results indicate the superiority of the performance of hybrid approach than GA and ICA in finding the best solution in reasonable computational time.

کلمات کلیدی:

JIT scheduling, Flow shop, Preemption, Idle time

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