

AN EPQ INVENTORY MODEL FOR NON-INSTANTANEOUS DETERIORATING ITEMS UNDER TRADE CREDIT POLICY

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Abstract

In this paper, we developed an EPQ inventory model for deteriorating items under the condition of permissible delay in payment i. e. trade credit policy. In real life problems, The deterioration of items is not seems to be constant, so we take non-instantaneous deterioration instead of constant deterioration and we consider the selling price is not necessarily equal to the purchasing price and adopt the assumptions of Huang (2004) that, the end of the credit period retailer will make a partial payment on total purchasing cost and payoff the remaining balance by loan of the bank. We also assumed that retailer dose not return the money to the bank at the end of the inventory cycle. This model helps to minimize the total inventory cost by finding an optimal replenishment policy. Some useful theorems have been framed to characterize the optimal solutions. Numerical examples and sensitivity analysis of some parameters are also given to demonstrate the theoretical results.

Key Words : *EOQ inventory model, Weibull distribution deterioration, Finite replenishment rate, Trade credit.*

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