A Single Server Compulsory Vacation Queue with Two Type
of Services and with Restricted Admissibility

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Abstract

A single server queue with compulsory vacation has been considered. In addition admission to queue is based on a Bernoulli process and the server gives two types of services. For this model the probability generating functions of number of customers in the queue for different server states are obtained using supplementary variable technique. Some performance measures are calculated. Particular cases are deduced and some numerical examples are presented.

Keywords: Compulsory server vacation, Bernoulli process, restricted admissibility, supplementary variable technique, performance measures.