BULK ARRIVAL QUEUEING SYSTEM WITH STAND BY SERVER AND MULTIPLE VACATION QUEUEING SYSTEM

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Abstract: This paper deals with a bulk arrival queueing system using the concept of stand by server and multiple vacation queueing system. When the main server goes for type I or type II vacation, in order to provide continuous service, the stand-by server is used. Type I vacation is taken when all the waiting customers gets served and in the absence of main server, stand-by server provides the service whereas type II vacation is availed after returning from first vacation and still finds an empty queue. Again, in this case the stand by server is available to provide service but no customer is there to avail the service. The steady state is obtained in terms of probability generating function for the various system performance measures. Further, various performance measures are also derived for this queueing model.

1. Introduction

Since several years, the concept of stand-by server is of keen interest to many researchers. Many authors have studied the queueing system with stand-by server