

Analysis of a Bulk Queue with Multiple Vacations and Closedown Times

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Abstract

In this paper a $M^x/G(a, b)/1$ queueing system with multiple vacations and closedown times is considered. After completing a service, if the queue length is ξ , where $\xi < a$, then the server performs closedown work. After that the server leaves for multiple vacation of random length, irrespective of queue length. After a vacation, When he returns, if the queue length is less than ' a ', he leaves for another vacation and so on, until he finds ' a ' customers in the queue. After a vacation, if the server finds at least ' a ' customers waiting for service, say ξ , then he serves a batch of size $\min(\xi, b)$ customers, where $b \geq a$. Various Characteristics of the queueing system and a cost model with the numerical result for a particular case of the model are presented in this paper.