International J. of Math. Sci. & Engg. Appls. (IJMSEA)
ISSN 0973-9424, Vol. 9 No. I (March, 2015), pp. 155-163

A STUDY ON SINGLE SERVER RETRIAL QUEUE WITH STARTING FAILURE AND MULTIPLE VACATIONS

M. RENISAGAYARAJ[1] AND D. MOGANRAJ[2]
[1] Department of Mathematics,
Sacred Heart College, Tirupattur, Tamilnadu, India
[2] Department of Mathematics,
Arunai Engineering College,
Tiruvannmalai, Tamilnadu, India

Abstract

A Single server retrial queue with Bernoulli feedback with multiple vacations is studied. Where the server is subject to starting failure, the customer in the orbit accesses the server under FCFS model. If there is no customer in the orbit then the server goes for vacation and the vacation periods are exponential distributed with mean time $\frac{1}{\mu}$ on returning from vacation if the server founds no customer in the orbit then if again goes for vacation. The server continuously to go for vacation until he finds at least one customer in the orbit. In this paper the orbit size distribution at random points and vacation performance measures are derived and the time dependent probability generating function in terms of Laplace transform and derive explicitly the corresponding steady state results.

Key Words : *Feedback, Multiple vacations, Starting failures, Retrial queue, Steady state solution.*