Queue Length Distributions at Various Epochs in Discrete-Time D-MAP/G/1/N Queue and Their Numerical Evaluations

M. L. Chaudhry

Royal Military College of Canada

Canada

U. C. Gupta

Indian Institute of Technology

Indian

Abstract

Discrete-time queues with discrete-Markovian arrival process (D-MAP) are useful for the investigation of telecommunication systems based on ATM. This paper addresses the modelling and analysis of the D-MAP/G/1/N queue and obtains state probabilities at various epochs using imbedded Markov chain and supplementary variable methods. Further, some numerical results are also presented.