

## On The k-out-of-n : G (or F) System Viewed as a Multi-Server Queue

### Abstract:

This paper extends the k-out-of-n : G/F reliability system to a multi-server queue. We study a multi-server reliability-queueing model with N-Policy of repair. The queueing system considered here is having n servers each of which has identically and exponentially distributed service time with parameter  $\mu$ . Servers are subjected to breakdown at an exponential rate  $\gamma$  and the repair process follows N-policy of repair. Even though these servers work independently of each other, service can be provided only if k servers are available in the system as functional. Steady state analysis has been done and system state distribution is obtained. Associated performance measures have been evaluated. Both graphical as well as numerical illustrations have been done. An optimization problem is also considered and the results are presented.