Abstract

This paper focuses on the stochastic modeling of a computer system of two identical units- one is initially operative and other is kept as spare in cold standby. In each unit h/w and s/w components work together and fail independently. There is a single server who visits the system immediately as and when required. The server takes the unit under preventive maintenance after a maximum operation time at normal mode. The h/w components under go for repair at their failure and are replaced by new one in case these are not repaired up to a maximum repair time. However, s/w components are replaced by new one instead of repair. Priority is given to the preventive maintenance (PM) of the unit over replacement of the s/w components. The failure time distribution of the components follow negative exponential whereas the distributions of preventive maintenance, repair and replacement time are taken as arbitrary with different probability density functions. Several reliability and economic indices have been obtained using semi-Markov and regenerative point technique. The graphical study of the results has also been made.

References

Stochastic Modeling of a Computer System with Priority to PM over S/W Replacement Subject to Maximum Operation and Repair Times


Index Terms

Computer Science  Applied Sciences

Keywords

Computer System  Stochastic Model  Preventive Maintenance  Maximum Operation And Repair Times
Preventive Maintenance  Priority
Replacement
Reliability And Economic Measures