# A TWO DISSIMILAR UNIT STANDBY SYSTEM WITH MINOR AND MAJOR REPAIRS IN PRIORITY UNIT AND CORRELATED FAILURE AND REPAIR

**LAVI TYAGI AND PRADEEP CHAUDHARY**

*Department of Statistics*
*Ch. Charan Singh University, Meerut-250004(India)*
*E-mail: lavityagi444@gmail.com, pc25jan@gmail.com*

**Abstract**—*This paper deals with a two non-identical unit system model with two types of repair. The units are named as unit-1 and unit-2. Initially, unit-1 is operative and unit-2 is kept into cold standby.Unit-1 have two possible modes: Normal (N) and quassi-normal (N'). When the unit-1 fails from its normal mode, it goes into minor repair and after the completion of this minor repair it doesn't become as good as new and enters into quassi-normal mode. In quassi-normal mode unit operates with reduced efficiency and its failure rate is increased as compared to its functioning in normal mode. When unit-1 fails from quassi-normal mode it goes for major repair. The unit-2 has only one operative mode i.e. normal mode. It becomes as good as new upon its repair. A single repairman is always available with the system for the minor and major repairs of unit-1 as well as the repair of unit-2. The unit-1 gets priority in both type of repair of unit-1 over the repair of unit-2. The joint distributions of failure and repair times of the units are assume to follow bivariate exponentials with different sets of parameters. The various measures of system effectiveness are obtained by using regenerative point technique.*

**Keywords:** *Transition probability, regenerative point, reliability, MTSF, availability.*