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## RELIABILITY AND AVAILABILITY ANALYSIS OF CONCRETE MIXTURE PLANT USING SUPPLEMENTARY VARIABLE TECHNIQUE

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## Abstract

The purpose of this paper is to compute reliability and availability of a concrete mixture plant having eight subsystems arranged in a series. The time to failure of each subsystemfollowsnegative exponential distribution while repair time distribution is taken as arbitrary.Sufficient repair facility is provided to the system for repair of the systems. Repairs and switch devices are perfect. All random variables are statistically independent. Various measures of system effectiveness such as reliability, mean time to system failure (MTSF), availability are derived using supplementary variable technique. The numerical results for reliability and availability are obtained for particular values of various parameters and costs.

Key Words : Concrete mixture plant, Reliability, Availability, Laplace transformation and Supplementary variable technique.

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