1145-VT-2457 **Madhurima Datta*** (madhurima92.datta@iitkgp.ac.in), Department of Mathematics, Indian Institute of Technology Kharagpur, Kharagpur, 721302, India, and **Nitin Gupta** (nitin.gupta@maths.iitkgp.ernet.in), Department of Mathematics, Indian Institute of Technology Kharagpur, Kharagpur, 721302, India. *A stochastic comparison study of series and parallel systems having Kumaraswamy's and Fréchet distributed components.*

Kumaraswamy's distribution is a double-bounded distribution similar to Beta distribution, with an advantage that the cumulative distribution function (cdf) of Kumaraswamy's distribution has a closed form, unlike Beta distribution. This helps in computational purposes by reducing complexity. The cdf of Kumaraswamy's distribution is

$$F(x;\alpha,\beta) = 1-(1-x^{\beta})^{\alpha}, \quad x>0; \quad \alpha,\beta>0,$$

α,β are two shape parameters. Fréchet distribution is an extreme value distribution which is used to estimate stock index, extreme events like earthquake, rainfall etc. The cdf of Fréchet distribution is given by

$$F(x;\mu,\theta,\alpha) = e^{-\left(\frac{x-\mu}{\theta}\right)^{-\alpha}}, x>\mu, \alpha>0, \theta>0,$$

where μ,θ and α are the location, scale and shape parameters respectively. We study the hazard rate and reversed hazard rate ordering of minimum and maximum order statistic from heterogeneous Kumaraswamy's distributed samples with varying shape parameters. We also obtain likelihood ratio ordering, hazard rate and reversed hazard rate ordering of maximum and minimum order statistic from Fréchet distributed samples with varying scale and location parameters. (Received September 25, 2018)