Lab Assignment - 6

Instructor: Dr. Arabin Kumar Dey

1 Due date:

- 20/3/2012.

2 Notes:

- Submit the codes in all R or SAS corresponding to the questions.
- Make a proper documentation preferably in latex or using some other software and submit the printout of the report in .pdf form.
- Each student needs to write his/ her own solutions, even though discussions of the assignments between students are encouraged.

3 Assignments:

1. Draw the surface plot of bivariate gumbel copula with parameter equals to 1.5 and bivariate normal copula with parameter equals to 0.7.
2. Draw the contour plot of the density and cdf of bivariate gumbel copula with with parameter 1.4 and marginals N(3,4) and T(3).

3. Consider the monthly log returns of Boeing (BA), Abbott Labs (ABT), Mo- torola (MOT) and General Motors (GM) from January 1998 to December 2007. The log returns are in percentages.

   (a) Calculate the correlation co-efficient for MOT and GM. Generate 500 random number from gaussian copula taking parameter as this correlation coefficient. Draw contour plot of the empirical copula based on the generated sample and superimpose the empirical copula based on the data for MOT and GM.