



4. a) State the eigenvalue problem. 4
- b) What are the assumptions concerning arrivals process for a queuing system ? 3
- c) Define autocorrelation function of a stationary random signal. 3
- d) What is the binomial series expansion $(1 + z)^n, |z| < 1$? 4
5. Show one procedure to numerically solve an ordinary differential equation with boundary conditions.
6. a) What is the method of Lagrange multipliers ?
- b) Define sample average and mean value of a random variable.
7. a) Show the procedure of Linear Regression.
- b) Show a method to numerically determine zeros of a function.
8. How are eigenvalues and eigenvectors of a matrix numerically determined ?
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