

LIST OF QUESTIONS FOR ``BAYESIAN STATISTICS'' COURSE.

1. Bayesian principle. Prior and posterior distributions
2. Total probability and Bayes Formulae
3. Classical examples of calculation of posterior distributions
4. Joint distribution functions and joint density functions. Independent random variables
5. Non-informative prior distribution.
6. Statistical decision theory. Posterior intervals.
7. Bayesian hypothesis testing and model selection. Examples.
8. Single parameter model. Normal distribution with known variance and unknown mean
9. Single parameter model. Prior distribution of parameter is exponential, and likelihood function is Poisson.
10. Risk functions. Quadratic loss function
11. Risk functions. Absolute error loss function
12. Risk functions. Zero-one loss function
13. Calculation of Bayes' estimates using Risk functions. Examples.
14. Bayesian Inference for the normal distribution. Examples.
15. Conjugate prior distributions. Improper priors. Examples.
16. Simple multi-parameter models.
17. Simulation. Inverse transform method
18. Markov chains. Basic definitions
19. Chapman-Kolmogorov equation and prove of property of stochastic matrix
20. Ergodic Markov chains. Examples
21. MCMC algorithms
22. Dirichlet distribution
23. The inverse method for sampling of discrete random variables.
24. Regression models.
25. Linear regression models.
26. Generalized linear model.