2006 Paper 8 Question 4

Distributed Systems

(*a*) Describe, with examples, the function of a naming service for a large-scale distributed system. Include definitions for "name space" and "naming domain". [6 marks]

(*b*) Discuss consistency *versus* availability for naming data in large-scale systems. [4 marks]

(*c*) How can any distributed naming service be engineered so that invocations on behalf of users can be resolved efficiently in the presence of failures and heavy load? [4 marks]

(*d*) Contrast the assumptions under which DNS was designed originally for the Internet, with the properties of dynamically formed groups of mobile hosts using wireless communication (MANETS). How might DNS-like services be provided for MANETS? [6 marks]