

1999 Paper 1 Question 12

Operating Systems

File systems comprise a *directory service* and a *storage service*.

What are the two main functions of the directory service? [2 marks]

What is a directory *hierarchy*? Explain your answer with the aid of a diagram. [2 marks]

What information is held in file *meta-data*? [4 marks]

What is a *hard link*? Does file system support for hard links place any restrictions on the location of file meta-data? [2 marks]

What is a *soft* (or *symbolic*) link? Does file system support for soft links place any restrictions on the location of file meta-data? [2 marks]

Describe with the aid of a diagram a Unix *inode*. You should explain the motivation behind *indirect blocks*, and how they are used when accessing a file. [8 marks]