1994 Paper 4 Question 4

Operating System Functions

Describe the use of a *table of pointers* and a *table of extents* to store the list of disc blocks which compose a file. Pay particular attention to how such data structures can be designed to enable the efficient support of very large files, and give estimates of their performance for finding the location of a block chosen at random.

[14 marks]

Describe how such data structures would be used in the implementation of a *log-structured* file system with consideration of the impact of garbage collection.

[6 marks]