2006 Paper 4 Question 5

Operating Systems II

In the early 1980s, a new file-system called the *fast file-system* (FFS) was designed for BSD Unix.

(*a*) What *two* problems with the original Unix file system was FFS designed to overcome? [2 marks]

(*b*) For *each* of these problems, describe the solution used, and comment on its effectiveness. [6 marks]

(*c*) From the modern perspective, how appropriate or effective do you believe *each* of these solutions is? Justify your answer. [2 marks]

(*d*) Sketch an efficient design for a file-system to support (soft) real-time access to large multi-media files. Include details of how you would lay out and access files and directories, and how you would perform integrity checking. Be sure to justify any key differences from conventional designs, and to state any assumptions that you make. [10 marks]