

2003 Paper 4 Question 5

Operating Systems II

- (a) Describe the basic operation of a *log-structured file system*. What are the potential benefits? What are the problems? [8 marks]
- (b) Several modern file systems make use of *journalling*. Describe how a journal is used by the file system, and the situations in which it is beneficial. [6 marks]
- (c) You are assigned the task of designing a tape backup strategy for an important file server. The goal is to maximise the time any file is held on backup while minimising the number of tapes required. Sketch your strategy, commenting on the support you require from the file system, and justifying your design decisions. [6 marks]