

1999 Paper 3 Question 8

Operating System Functions

FIFO, LRU, and CLOCK are three page replacement algorithms.

- (a) Briefly describe the operation of each algorithm. [6 marks]
- (b) The CLOCK strategy assumes some hardware support. What could you do to allow the use of CLOCK if this hardware support were not present? [2 marks]
- (c) Assuming good temporal locality of reference, which of the above three algorithms would you choose to use within an operating system? Why would you not use the other schemes? [2 marks]

What is a *buffer cache*? Explain why one is used, and how it works. [6 marks]

Which buffer cache replacement strategy would you choose to use within an operating system? Justify your answer. [2 marks]

Give *two* reasons why the buffering requirements for network data are different from those for file systems. [2 marks]