1997 Paper 4 Question 5

Data Structures and Algorithms

At frequent intervals 100,000 numbers arrive in a message. It is required to select and record their median and throw the rest away.

Describe and justify the algorithm you would use to do this as quickly as possible, and explain, as if to a manager, any risks you are taking.   [6 marks]

If the manager insisted that the risk be either (a) very greatly reduced or even (b) eliminated, outline what you would do.   [6 marks]

In case (b) explain to the manager why he is almost certainly misguided and then describe in detail the technique you would adopt.   [8 marks]