

1997 Paper 9 Question 6

Advanced Algorithms

Describe the structure of a *Fibonacci heap* and explain how to perform the following operations:

- (a) create an empty heap
- (b) add a single new node to a heap
- (c) form the union of two existing heaps
- (d) identify the smallest item in a heap

How long does each of these operations take?

[20 marks]