**2007 Paper 8 Question 13**

**Bioinformatics**

(*a*) Describe with *one* example the difference between Hamming and Edit distances. [2 marks]

(*b*) Discuss the Smith–Waterman algorithm. What is the complexity and the relationship with the problem of finding the longest common subsequences? [5 marks]

(*c*) Describe the Banded algorithm for local alignment and its complexity. [5 marks]

(*d*) Describe the four Russian speedup algorithm. [8 marks]