

**COMPUTER SCIENCE TRIPOS Part II – 2018 – Paper 7**

**3 Bioinformatics (PL)**

- (a) Explain with one example the difference between local and global alignment. [3 marks]
- (b) Give one example why the multiple alignment, as implemented in the software Clustal, described in the course, needs a guide tree. [4 marks]
- (c) What is the scope of phylogeny? [2 marks]
- (d) Describe the UPGMA algorithm. [4 marks]
- (e) Explain with one example what the ultrametric property of a phylogenetic tree tells us about the evolutionary process. [3 marks]
- (f) Explain the steps and the complexity of the divide and conquer approach to sequence analysis. [4 marks]