

9 Natural Language Processing (SHT)

- (a) Define the terms *morpheme*, *affix*, *circumfix* and *derivational morphology* and give examples. [4 marks]
- (b) What is a finite state transducer (FST), and what is it used for in computational linguistics? How does it differ from a finite state automaton? [3 marks]
- (c) Draw an FST which recognises the affix *-ly* associated with regular adverbs in English. Demonstrate that your FST correctly handles cases such as *bright* → *brightly*, *simple* → *simply*, *silly* → *sillily* and *terrific* → *terrifically*. [9 marks]
- (d) In terms of linguistic phenomena, which aspects of the morphology of adverbs does your FST fail to handle correctly? Could these problems be fixed with a more involved FST, or are they general problems with FST? [4 marks]