

2010 Paper 3 Question 5

Concepts in Programming Languages

- (a) List **two** differences between the programming languages FORTRAN and Pascal. [4 marks]
- (b) List **two** differences between the programming languages SIMULA and Smalltalk. [4 marks]
- (c) Explain what is understood by type checking and by type inference in the context of programming languages. Compare the two approaches, presenting their advantages and disadvantages. [4 marks]
- (d) Give an example in the SML Modules language of a signature and of a structure. State whether or not the structure matches the signature, explaining your answer. [4 marks]
- (e) The programming language Scala introduced *case classes*. Explain why they are useful in programming, giving code samples. [4 marks]