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]