1998 Paper 7 Question 15

Additional Topics

Explain the ingredients of the judgement form

$$E \vdash_v exp \Rightarrow R$$

which represents the evaluation of an expression in Standard ML. Explain also how, in a fuller form, it caters for side-effects in expression evaluation, and illustrate this using one of the evaluation rules. [7 marks]

State two theorems about evaluation in Standard ML: one which asserts that it is deterministic, and another which asserts that pattern-matching has no side-effects. [6 marks]

Explain how the raising and handling of exceptions is expressed in the evaluation rules. [7 marks]