1999 Additional Topics : Exam question by RM, solution notes

I expect a number of points, all A which can be found in the lecturenotes on Formal Definition of Programming Languages, and a good exposition which shows an understanding of the important points; for example

- A description of the notion of a delivery judgement

- Examples of inference rules and inferences for both evaluation and typechecking.

- For evaluation, an indication of how value environments, state and exceptions can be handled. (I would not expect full detail), Also pattern-matching deserves mention .

- For typechecking, an indication of how type environments can be handled, and in particular how they work with polymorphism.

[19 marks]

Several theorems could be mentioned, e.g:

- Determinacy of evaluation
- No side-effects in pattern-matching .
- Principal types
- Soundness of type-checking (i.e. if an expression gets type integer then it will deliver an integer)

[6 marks]