CSC236, Summer 2004, Assignment 5, marking scheme

Questions were marked out of different numbers of points, and then scaled to be out of 20. An (upward) shift of 6.0 marks was added to all assignments.

1. This question was marked out of 16, 4 marks per sub-part, as follows:

   - 0 marks were awarded if a positive claim was made when the problem was false and no proof or a very problematic proof was given.
   - 0 marks were awarded if a negative claim was made when the problem was true and the counterexample could easily be shown not to work.
   - 2 marks were awarded if a positive claim was made when the problem was false and a reasonable attempt was made at the proof but small points were missed which led to the error.
   - 2 marks were awarded if a negative claim was made when the problem was true and the counterexample was almost correct but certain cases were missed which led to the error.
   - 4 marks were awarded if the claim was correct and the proof/counterexample were correct.
   - 1 marks would be deducted from any of the above if the work was sloppy or slightly incomplete.
   - For 1b) 1 mark was deducted if the student did not mention that Theorem 7.4, page 189 had to be applied repeatedly and the student did not use induction to compensate for this.
   - For 1d) 1 mark was deducted if the student did not prove that the empty string had to be in L(R). Only 0.5 was deducted if the student mentioned the empty string but was not able to prove that it had to be in L(R).
   - For 1d) 1 mark was deducted if the student mistakenly concluded that L(R)=emotyString.

2. This question was marked out of 20, 4 marks per part. Two marks were awarded for the regular expression; two marks were awarded for the justification. It was possible to get the two marks for a plausible justification, even if the regular expression was not correct.

3. This question was marked out of 30, 10 marks per part.

   REGULAR EXPRESSION: 2 marks for a correct regular expression.

   PROOF OF REGULAR EXPRESSION: 3 marks for proof that the regular expression is correct. 1.5 marks for a faulty proof of "correctness" for a regular expression that turns out to be incorrect. A few words of explanation is not a proof.

   DFSA: A slightly faulty DFSA loses 1 mark. If the definition of the language is misunderstood, then no marks are awarded for the DFSA. Failure to correctly state the invariant loses 1 mark. In most cases, an incorrect DFSA led to an incorrect proof.

4. This question was marked out of 15, as follows:

   (a) 4 marks: 2 for each machine
   (b) 3 marks. 2 marks deducted for a correct machine that doesn't use the Cartesian product construction.

(c) 6 marks: 3 for the state invariant, 3 for the proof

(d) 2 marks

5. This question was marked out of 15, 3 for each part. There was 1 mark for the claim, 2 marks for the justification.