Specification and Verification I

(a) What is partial about partial correctness? [2 marks]

(b) What is the difference between a variant and an invariant? [2 marks]

(c) Why are annotations needed for mechanising program verification? [2 marks]

(d) What additional annotations are needed for total correctness? [2 marks]

(e) How do refinement and post hoc verification differ? [2 marks]

(f) Give an example of a higher-order formula that is not first-order. [2 marks]

(g) Why is higher-order logic typed? [2 marks]

(h) How are \{P\}C\{Q\} and \text{wp}(C, Q) related? [2 marks]

(i) How can \(c\)q and \(<c>q\) be defined in higher-order logic? [2 marks]

(j) Explain the difference between soundness and completeness. [2 marks]