Specification and Verification I

(a) What is the difference between partial and total correctness? [4 marks]

(b) Why is the assignment axiom more problematical for total correctness than for partial correctness? [4 marks]

(c) State the \texttt{WHILE}-rule for total correctness. [4 marks]

(d) What needs to be added to the method of verification conditions to make it work for total correctness? [4 marks]

(e) Explain how a total correctness specification \([P][C][Q]\) can be embedded as a term \texttt{TotalSpec} \(p\ c\ q\) in higher-order logic. [4 marks]