Software Engineering II

(a) Briefly describe top-down refinement, listing both advantages and drawbacks. [4 marks]

(b) How can we achieve efficiency without sacrificing reliability or programmer productivity? [3 marks]

(c) How can we minimise the hazards associated with memory management? [3 marks]

(d) In the Z specification language, what are \( \Delta \) and \( \Xi \) schemas? [5 marks]

(e) Contrast a loop invariant with the Z concept of invariant. [5 marks]