2   Computer Design (swm11)

(*a*) What is the difference between memory latency and bandwidth?   [2 marks]

(*b*) What is the difference between an interrupt and an exception?   [3 marks]

(*c*) Why is a computer's memory implemented as a hierarchy of memories and yet the programming model represents physical memory as a flat linear address space?   [5 marks]

(*d*) What is the difference between a direct-mapped and a set-associate cache, and how do their cache-line replacement policies differ?   [5 marks]

(*e*) Contemporary commercial processors use a register file to store intermediate results. Historically accumulators or operand stacks were used instead of a register file. What are the advantages of a register file over an accumulator and an operand stack?   [5 marks]