

2000 Paper 5 Question 2

Computer Design

Modern processors exploit instruction level parallelism in order to improve throughput.

- (a) Control-flow processors use pipelining to improve throughput. What limits throughput in the simple 5-stage pipeline depicted below? [10 marks]

instruction fetch	decode/ register fetch	execute	memory access	register write back
----------------------	---------------------------	---------	------------------	------------------------

- (b) What is the principle of operation of a static data-flow processor and how does it resolve data dependencies? [10 marks]