

2003 Paper 13 Question 2

Computer Design

- (a) Briefly describe the differences between a microprocessor's interface bus, a system I/O bus (such as PCI), and a peripheral interface. Consider the bandwidth characteristics and physical implementation of each. [8 marks]
- (b) Show how four 64Mbit byte-wide DRAM chips could be interfaced to a simple 32-bit microprocessor. Give a schematic diagram showing the connections, and a timing diagram to demonstrate the operation of the control signals. [8 marks]
- (c) Why might accesses to sequential DRAM addresses be treated differently from non-sequential ones? [4 marks]