

2004 Paper 3 Question 1

Computer Design

TLBs and caches are examples of content-addressable memories (CAMs).

- (a) What is the principal difference between a CAM and a RAM? [4 marks]
- (b) What is the difference between fully associative, set associative and direct mapped lookup? [6 marks]
- (c) Why are TLBs always much smaller than caches? [4 marks]
- (d) Which of the lookup mechanisms in part (b) is usually used for a TLB and why aren't the other mechanisms usually used? [6 marks]