2006 Paper 7 Question 1

Comparative Architectures

(*a*) Give *three* fundamental differences between RISC and CISC processor design and explain why RISC might lead to improved performance.   [6 marks]

(*b*) Members of a *binary compatible* family of processors may have rather different hardware designs. Define this term and explain what variations between the processors in a family might exist, why they exist and how they are made to appear the same.   [7 marks]

(*c*) Processor families vary in the number of user registers in their basic programming models. How does this affect performance and what extensions are used, both above and below the programming model, to provide more register storage?   [7 marks]