

1998 Paper 6 Question 1

Structured Hardware Design

A child's toy is battery operated and has four large illuminated push buttons, a number of smaller buttons and a loudspeaker that is used to play tunes. Production will be 50 000 units per month for at least six months.

- (a) Give a block diagram of the product, showing the principal partition decisions. Describe the function of each block, explaining why it exists and how it should be made. [6 marks]
- (b) You may (or may not) have used a microprocessor – explain why your design strategy is a good idea and discuss the alternative approach. [6 marks]
- (c) How would you test the product concept before production? [4 marks]
- (d) How would you test the product in production before shipping? [4 marks]