

1995 Paper 4 Question 6

Structured Hardware Design

Describe a *test vector* and how a set of such vectors can be used in conjunction with a digital system tester to test a hardware module. [7 marks]

Give a Verilog language description of a circuit which has three inputs (including the clock), two outputs and which contains at least one flip-flop and at least one two-input gate. [4 marks]

Give a set of test vectors which yield 100% fault coverage for the module that you defined in the previous section. [4 marks]

Explain the need for special test modes and pins in certain hardware structures. What are the advantages and disadvantages of test inputs compared with test outputs? [5 marks]