

Name:

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COE 464, Term 042
Testing of Digital Circuits

Quiz# 5

Date: Sunday, May 16, 2005

Q1. Consider the circuit shown below and the **s-a-1** fault shown in the circuit.

- i. Compute the **observability** costs for the gates **n**, **i**, **k**, and **m** using the generalized formulas (6.1) to (6.4).
- ii. Generate a test for the **s-a-1** fault using the **FAN algorithm**. Use the costs computed in (i) to guide the selection. If the costs are equivalent, select based on alphabetical order. Show all the details of the algorithm including the decision tree.
- iii. Knowing that this vector is detected by only **two** test vectors, estimate the required **number of random test vectors** needed to guarantee the detection of the fault with a **95% confidence**.



