

2000 Paper 7 Question 2

VLSI Design

The colour picture below shows the layout of a standard cell designed as part of a library for implementing self-timed circuits in CMOS. The colours have the conventional interpretations: blue is metal-1, red is polysilicon, green is n-diffusion, cyan is p-diffusion, yellow is n-well and black denotes contact cuts.

Derive a stick diagram from the layout.

[8 marks]

Derive a circuit diagram labelling the external connections and explain the purpose and operation of the cell.

[6 + 6 marks]

