2000 Paper 9 Question 2

VLSI Design

Sketch a transistor-level design and give a brief description of the method of operation for each of the following memory cells:

(*a*) a dual-ported, static memory cell   [5 marks]

(*b*) a dynamic memory cell using standard MOS logic   [5 marks]

(*c*) a dynamic memory cell for dense memory   [5 marks]

Explain the comparative merits of the three designs and explain where they might be used.   [5 marks]