1999 Paper 9 Question 2

VLSI

What is a Muller C-element? Show its truth table and a circuit diagram using CMOS transistors.   [10 marks]

Show how it can be used

(a) to control the flow of data through a micro-pipeline using bundled data;
                                                                    [5 marks]

(b) to detect completion after a pipeline stage using dual-rail encoding.   [5 marks]