

1997 Paper 10 Question 13

Digital Electronics

A round robin arbiter attempts to allocate a resource in a cyclic fashion, but remembers only the last (or current) user of a resource. Outline the operation of a four-input round robin arbiter, describing the inputs, outputs and a sequence which shows its operation. [5 marks]

Draw the state diagram for a four-input round robin arbiter. [8 marks]

Derive equations for an implementation of a four-input round robin arbiter which uses J-K flip flops. *Do not minimise these equations.* [7 marks]