

1993 Paper 12 Question 1

Digital Electronics and Computer Design

Describe the operation and gate-level circuit of a multiplexer. [6+6 marks]

How may it be used in conjunction with a de-multiplexer to establish alternative connections across a unidirectional path between two modules? [2 marks]

What is involved in extending the method to allow a bidirectional path between two (or more) modules? [3 marks]

What do you understand by the terms *bus*, *master* and *slave* in connection with your circuit? [3 marks]