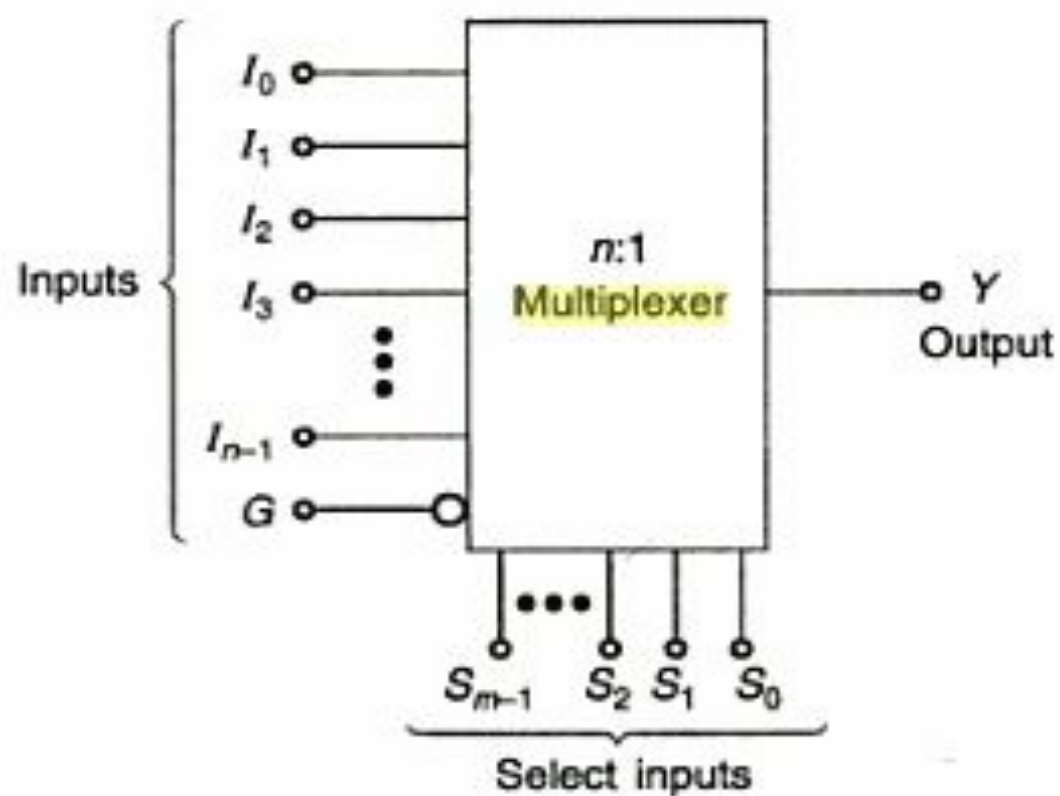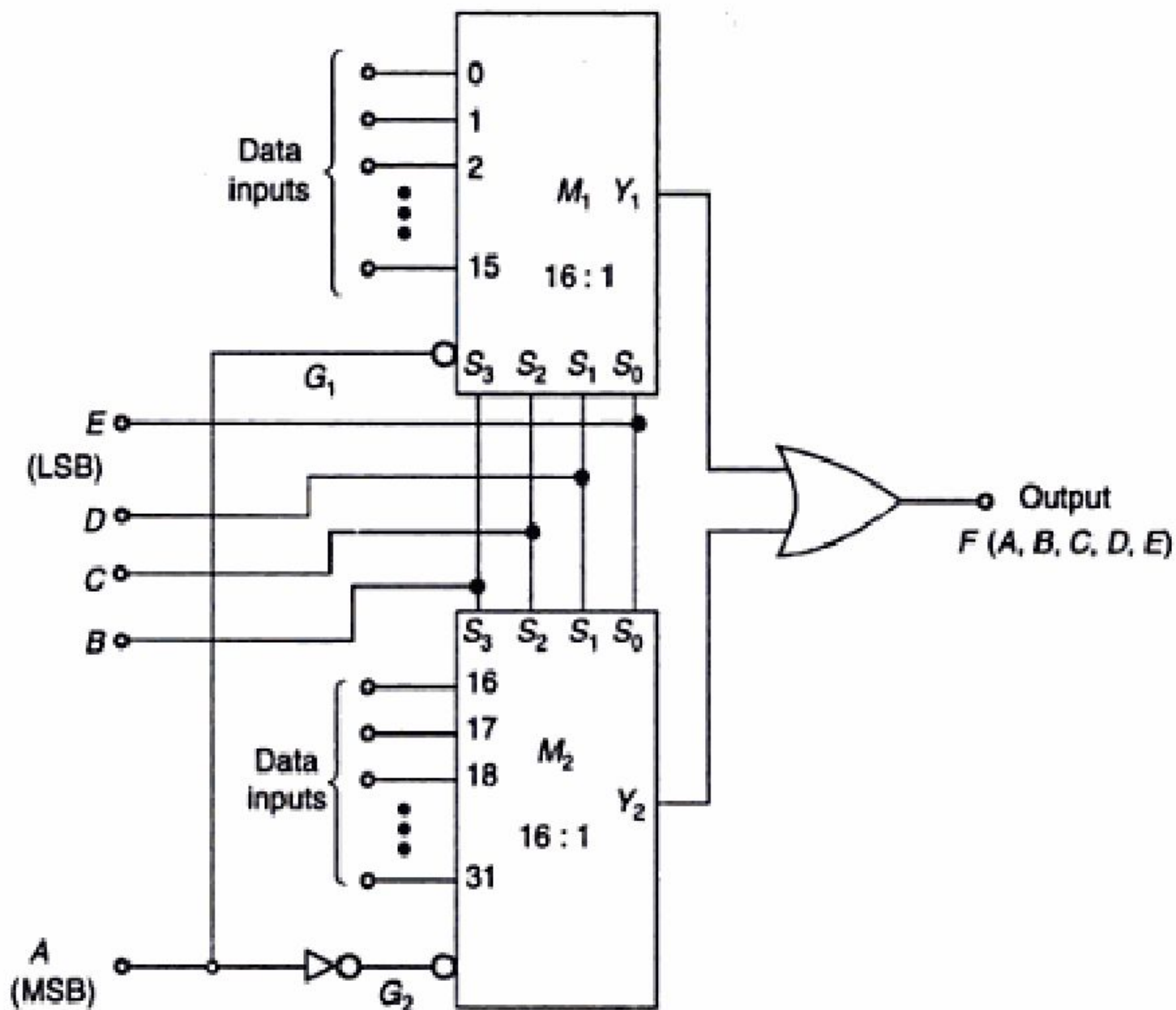# Multiplexer

- A **multiplexer** (or mux) is a device that selects one of several analog or digital input signals and forwards the selected input into a single line.

Fig. 6.1
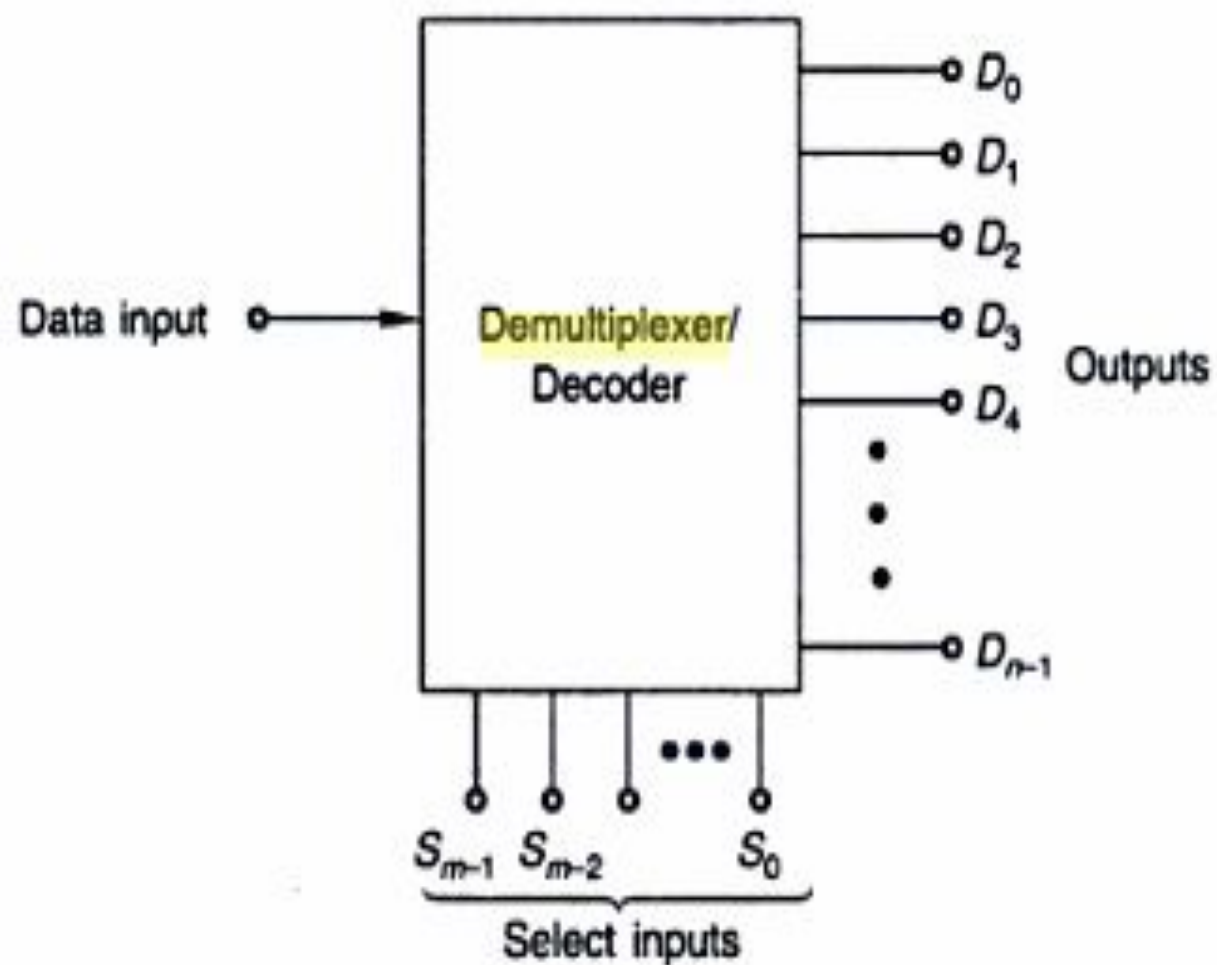
Block diagram of a digital multiplexer.

Fig. 6.5

32:1 multiplexer using two 16:1 multiplexers and one OR gate.

Applications of Mux

- Boolean function implementation circuit
- Pulse train generator.
- Encoders

Demultiplexer

- Demultiplex (DEMUX) is the reverse of the multiplex (MUX) process – combining multiple unrelated analog or digital signal streams into one signal over a single shared medium, such as a single conductor of copper wire or fiber optic cable. Thus, demultiplex is reconverting a signal containing multiple analog or digital signal streams back into the original separate and unrelated signals.

Fig. 6.7

Block diagram of a demultiplexer.

1:8 demux using two 1:4 demux