

Ćwiczenie nr 31

MULTIPLEKSER I DEMULTIPLEKSER

Goals:

To understand the schemes and operation of multiplexers and demultiplexers.

1 Experiment

- 1.1 Draw the logic schemes of multiplexers and demultiplexers.
- 1.2 Using logic modules 74151 and 74155 of the trainer board UNILOG-2 test the operation of the multiplexer and demultiplexer.
- 1.3 Experimentally determine the truth table for the operation of the mux and demux.
- 1.4 Design a chosen logic function with the aid of mux.
- 1.5 Propose and build the setup showing the multiplexer and demux cooperation.

2 Background

Logic schemes of the multiplexer and demultiplexer. Logic and digital signals. Positive and negative logics and applications.

Literatura

- [1] J. Pieńkos, J. Turczyński *Układy scalone TTL w systemach cyfrowych.*
- [2] W. Krasiński *Doświadczenia z podstaw techniki cyfrowej.*
- [3] Głocki W. Grabowski L. *Pracownia podstaw techniki cyfrowej,*
- [4] Parchański J. *Miernictwo elektryczne i elektroniczne.*
- [5] P. Horowitz, W. Hill, *The Art of electronics.*

Rozkład wyprowadzeń układów scalonych:

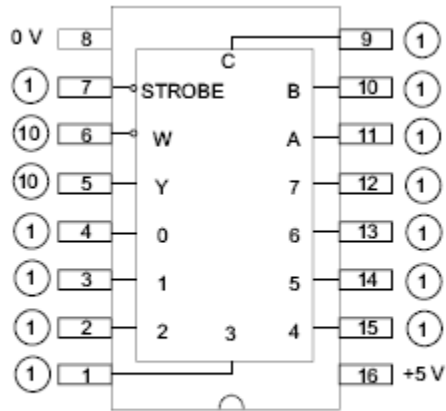


Fig. 1. IC 74151.

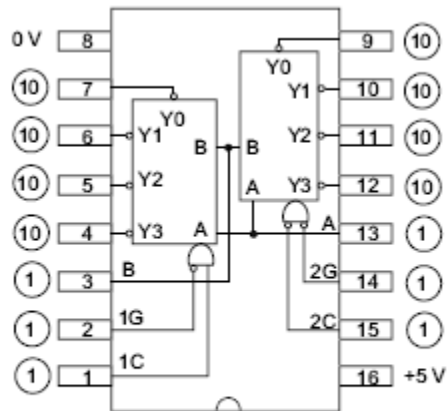


Fig. 2. IC 74155.

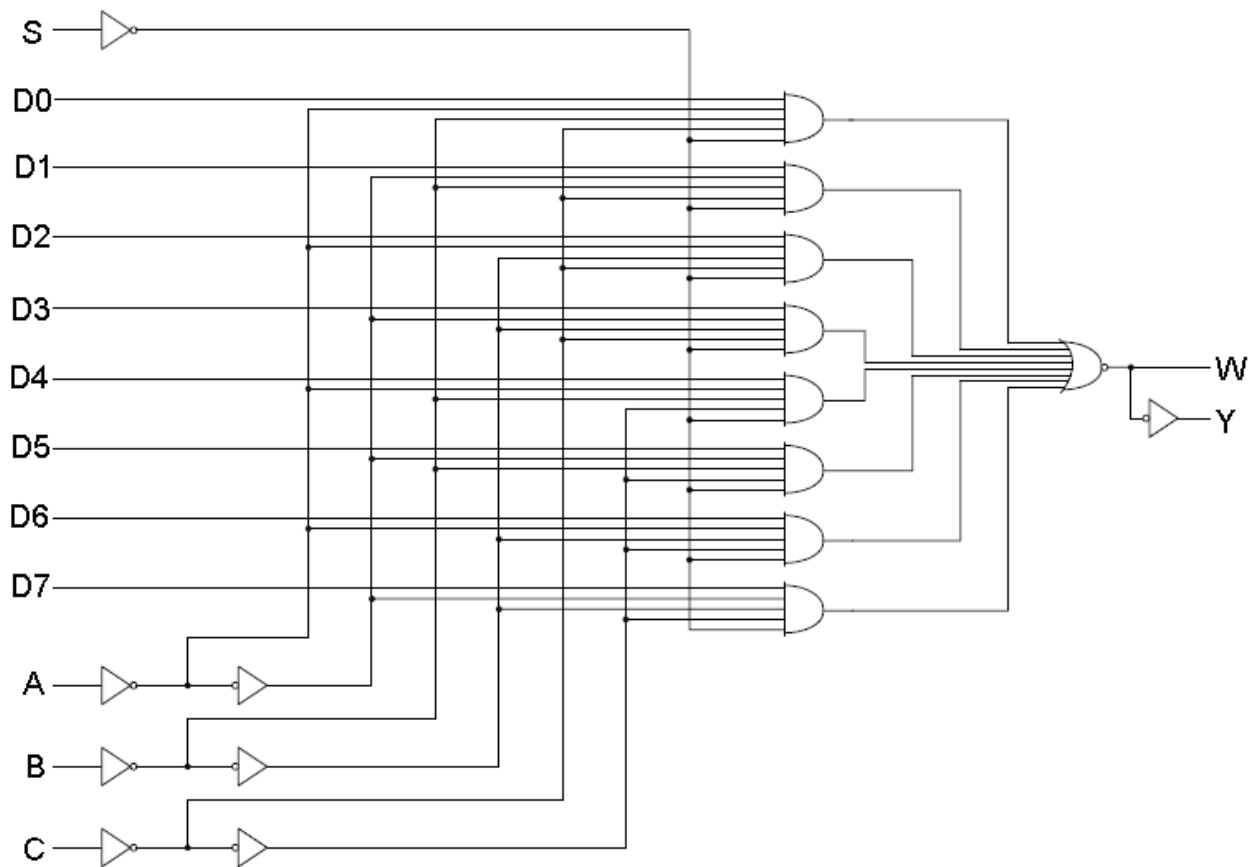


Fig.3. Multiplexer logic scheme.

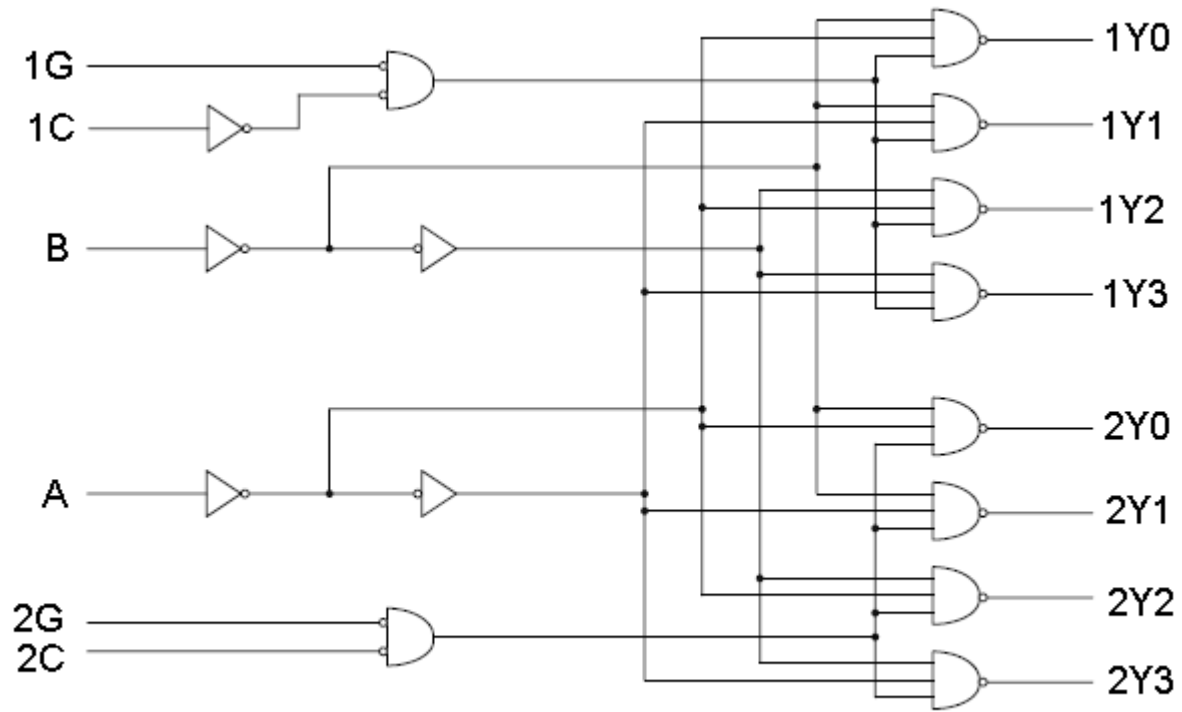


Fig. 4. Demultiplexer logic scheme.