CME 2003 Logic Design

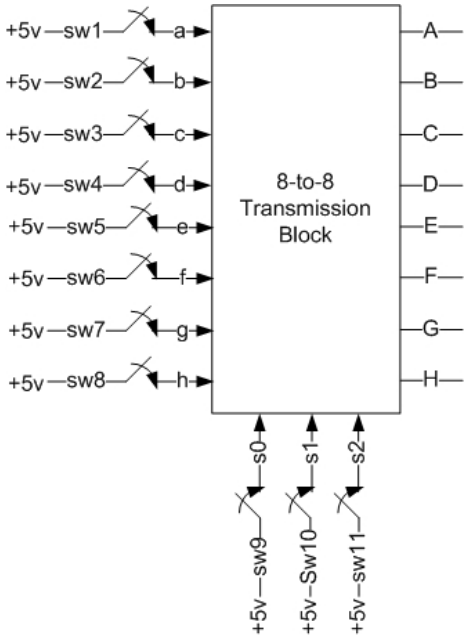
Experiment 6

In this experiment, you will design and implement **8-bit parallel input, serial output transmission circuit**. The block diagram of circuit is shown below. **8-bit abcdefgh input** will be set by switches connected to 5V in one position and to ground in other position. 8-to-8 Transmission Block consists of a **MUX** and a **DEMUX**. **ABCDEFGH output** of the Transmission Block will be as follows according to $\mathbf{S_2S_1S_0}$ connected to switches:

$S_2S_1S_0$	ABCDEFGH
0 0 0	**a** 1 1 1 1 1 1 1
0 0 1	1 **b** 1 1 1 1 1 1
0 1 0	1 1 **c** 1 1 1 1 1
0 1 1	1 1 1 **d** 1 1 1 1
1 0 0	1 1 1 1 **e** 1 1 1
1 0 1	1 1 1 1 1 **f** 1 1
1 1 0	1 1 1 1 1 1 **g** 1
1 1 1	1 1 1 1 1 1 1 **h**

Design the Transmission Block.

Block Diagram :



Equipments:

- 74LS151 (mux), 74LS138 (demux) and other necessary ICs such as Inverter, Or, And etc. you need.
- Any other equipments necessary for the experiment.

Preliminary Work:

Solve the problem using **MUX and DEMUX and other ICs if required.**
Construct and test the designed circuit in MaxPlus II.
Prepare the PreLab Report.
Come with your PreLab report and data sheets of the ICs you used in your design.

Experiment:

Construct the circuits you have designed . Test them, and evaluate the results.