Ministerul Educației al Republicii Moldova

Universitate de Stat “A. Russo”

Facultatea de Științe Reale, Economice si ale Mediului

**Raport**

**“Arhitectura și organizarea calculatorului”**

Lucrarea de laborator nr. 8

**Elemente combinationale: multiplexor,demultiplexor**

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**Scopul lucrării:**

1. Studierea elementelor combinaţionale (multiplexorul, demultiplexorul) în regim static.

2. Studierea elementelor combinaţionale (multiplexorul, demultiplexorul) în regim dinamic.

**Experimentul nr. 1. Multiplexorul**

**Regim static.**

Tabel 1. Multiplexor din 8 in 1

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **E** | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|  | X | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
|  | X | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
|  | X | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **I** | 0 |  |  |  |  |  |  |  |  |

Functia logica a multiplexorului din 8 in 1:

I =

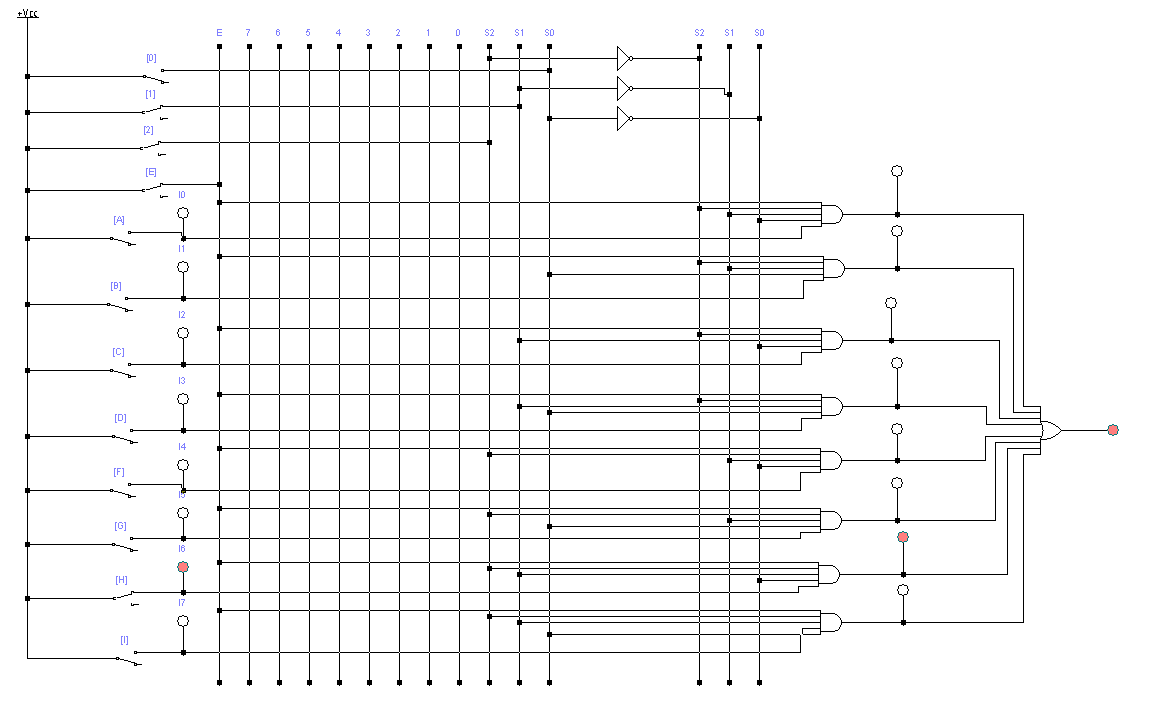


Fig. 1. Schema electrica a multiplexorului (regim static)

**Regim dinamic.**

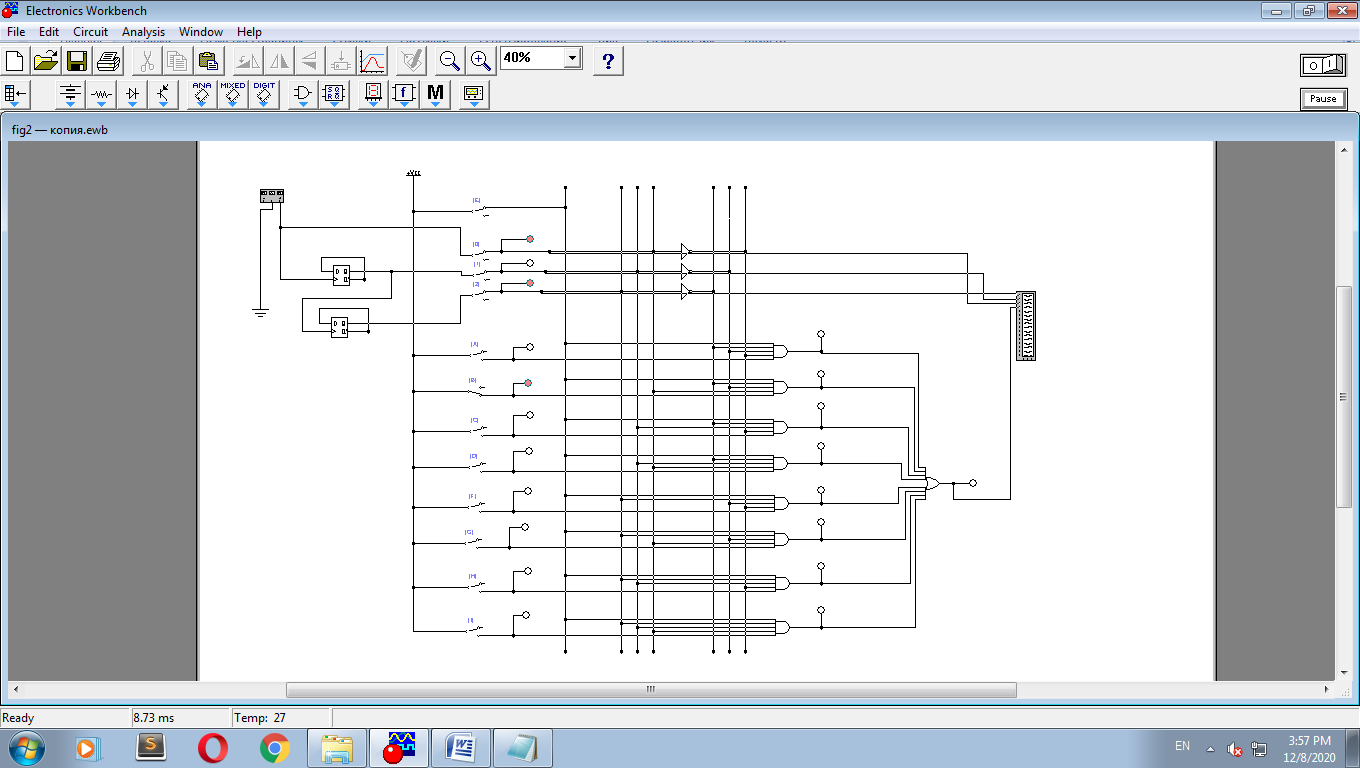


Fig. 2. Schema electrica a multiplexorului (regim dinamic)

**Experimentul nr. 2. Demultiplexorul**

**Regim static.**

Tabel 2. Demultiplexor din 1 in 8

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| E | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|  | x | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
|  | x | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
|  | x | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
|  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | I |
|  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | I | 0 |
|  | 0 | 0 | 0 | 0 | 0 | 0 | I | 0 | 0 |
|  | 0 | 0 | 0 | 0 | 0 | I | 0 | 0 | 0 |
|  | 0 | 0 | 0 | 0 | I | 0 | 0 | 0 | 0 |
|  | 0 | 0 | 0 | I | 0 | 0 | 0 | 0 | 0 |
|  | 0 | 0 | I | 0 | 0 | 0 | 0 | 0 | 0 |
|  | 0 | I | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Functia logica a demultiplexorului din 1 in 8:

I7 = ;

I6 = ;

I5 = *EI*;

I4 = ;

I3 = EI;

I2 = ;

I1 = ;

I0 = ;

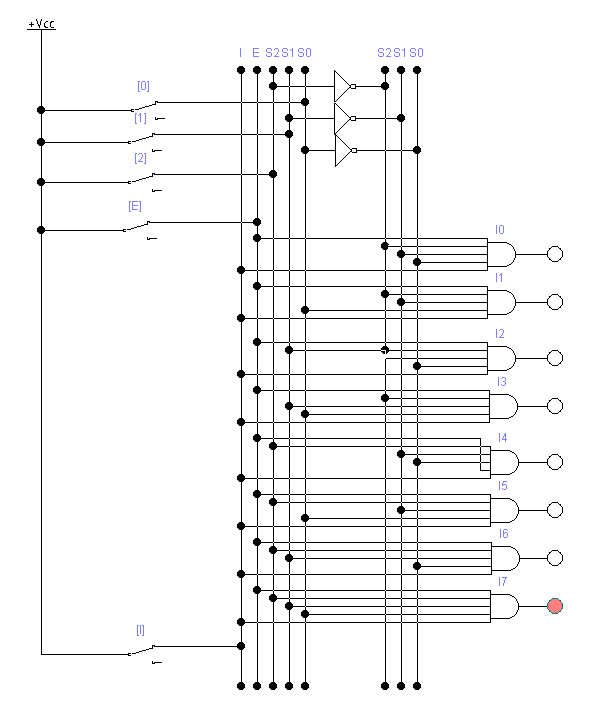


Fig. 3. Schema electrica a demultiplexorului (regim static)

**Regim dinamic.**

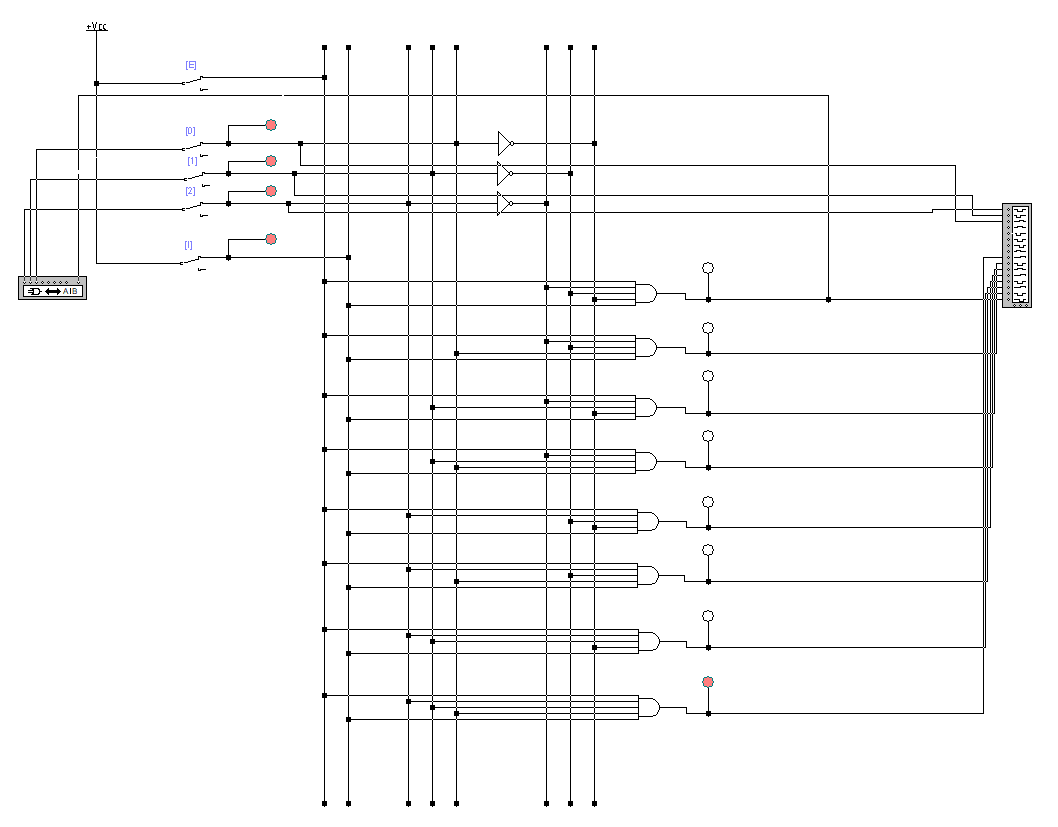


Fig. 4. Schema electrica a multiplexorului (regim dinamic)