

Lunes 30 Octubre del 2023.

Actividad

Reducir términos por medio de:

- M.K.
- Teoremas

Realizar la tabla de verdad y el diseño lógico por medio de compuertas

$$F = \overline{RS} + R\overline{Q}P + \overline{SPQR} + QP\overline{S} + [\overline{Q}\overline{S}\overline{P} + \overline{P}\overline{S}\overline{Q}R + R\overline{Q}\overline{S}]' + \overline{S}\overline{Q}P + \dots + \overline{RS}$$

$$+ [C\overline{P} + \overline{Q} + S)(Q + \overline{S} + P)]''$$

P	Q	R	S	F
1	1	1	1	1
1	1	1	0	1
1	1	0	1	0
1	1	0	0	1
1	0	1	1	1
1	0	1	0	0
1	0	0	1	0
1	0	0	0	1
0	1	1	1	0
0	1	1	0	0
0	1	0	1	1
0	1	0	0	0
0	0	1	1	1
0	0	1	0	0
0	0	0	1	0
0	0	0	0	0

P	Q	R	S	RS	SPQR	QSP	PSQR
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	1
0	0	1	0	0	0	1	0
0	0	1	1	0	0	1	1
0	1	0	0	0	0	0	0
0	1	0	1	0	0	0	0
0	1	1	0	0	0	0	0
0	1	1	1	0	0	0	0
1	0	0	0	1	0	0	0
1	0	0	1	1	0	0	0
1	0	1	0	1	0	0	0
1	0	1	1	1	0	0	0
1	1	0	0	1	0	0	0
1	1	0	1	1	0	0	0
1	1	1	0	1	0	0	0
1	1	1	1	1	0	0	0

$$= RS + R\overline{Q}R + \overline{SPQR} + QP\overline{S} + Q\overline{S}P + \overline{PSQR} +$$

$$R\overline{Q}\overline{S} + \overline{S}\overline{Q}P + \overline{S} + \overline{S} + S + RS + [C\overline{P} + \overline{Q} + S] +$$

$$[Q + \overline{S} + P]$$

$$= \overline{S} + \overline{RS} + R\overline{Q}R + \overline{SPQR} + Q\overline{S}P + \overline{PSQR} +$$

$$\overline{R}\overline{Q}\overline{S} + \overline{S}\overline{Q}P + \overline{S} + \overline{S} + S + RS + P\overline{Q} + P\overline{S} +$$

$$P + O + Q\overline{S} + \overline{Q}P + S\overline{Q} + O\overline{I} + \overline{S}P$$

$$= \overline{R} + \overline{P}QR + \overline{P}RS + \overline{P}\overline{Q}S$$

Grupo 1

PQRS
00000
00001
01000
01011
11000
11001
10000
10011

R

Grupo 2

PQRS
0111
0110

PQR

Grupo 3

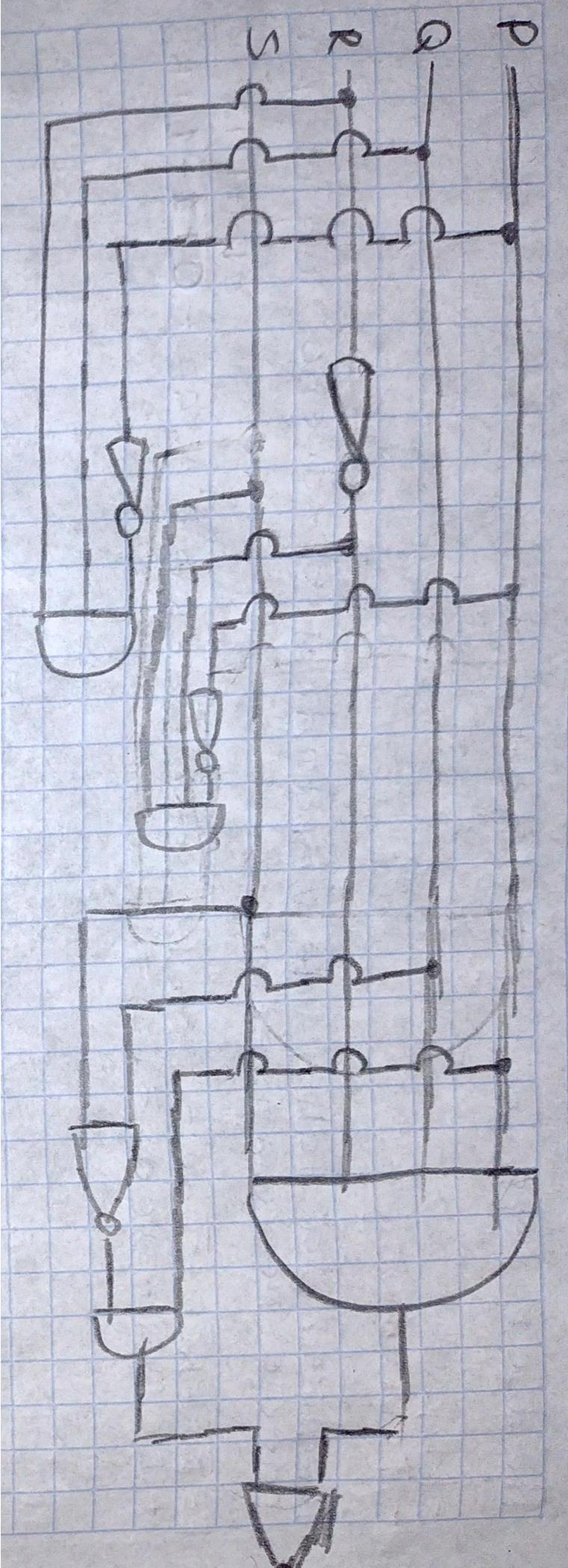
PQRS
0011
0111

P RS

Grupo 4

PQRS
1000
1010

P Q S



Realizar por medio M.K.

A	B	C	D	F
1	0	1	1	1
1	0	0	0	0
1	0	1	1	1
1	0	0	1	0
1	1	1	0	1
1	1	0	1	1
1	1	1	1	0
1	1	0	1	1
0	0	1	0	0
0	0	0	1	1
0	0	1	1	1
0	0	0	1	1
0	1	1	0	0
0	1	0	1	1
0	1	1	1	1
0	1	0	1	1

$$\begin{aligned} & \bar{A}\bar{B}\bar{C}\bar{D} + \bar{A}\bar{B}\bar{C}\bar{D} + \bar{A}\bar{B}\bar{C}\bar{D} + A\bar{B}\bar{C}\bar{D} + \\ & A\bar{B}\bar{C}\bar{D} + A\bar{B}\bar{C}\bar{D} + A\bar{B}\bar{C}\bar{D} + A\bar{B}\bar{C}\bar{D} + \bar{A}\bar{B}\bar{C}\bar{D} \\ & + \bar{A}\bar{B}\bar{C}\bar{D} + \bar{A}\bar{B}\bar{C}\bar{D} + \bar{A}\bar{B}\bar{C}\bar{D} + \bar{A}\bar{B}\bar{C}\bar{D} + \bar{A}\bar{B}\bar{C}\bar{D} \\ & + A\bar{B}\bar{C}\bar{D} \end{aligned}$$

Grupo 1

$$\begin{array}{l} ABCD \\ \hline 1101 \\ 0101 \\ \hline \overline{BCD} \end{array}$$

Grupo 2

$$\begin{array}{l} ABCD \\ \hline 0001 \\ 0011 \\ \hline \overline{ABD} \end{array}$$

Grupo 3

$$\begin{array}{l} ABCD \\ \hline 0011 \\ 0111 \\ \hline \overline{CD} \end{array}$$

$$= \overline{BCD} + \overline{ABD} + \overline{CD}$$

