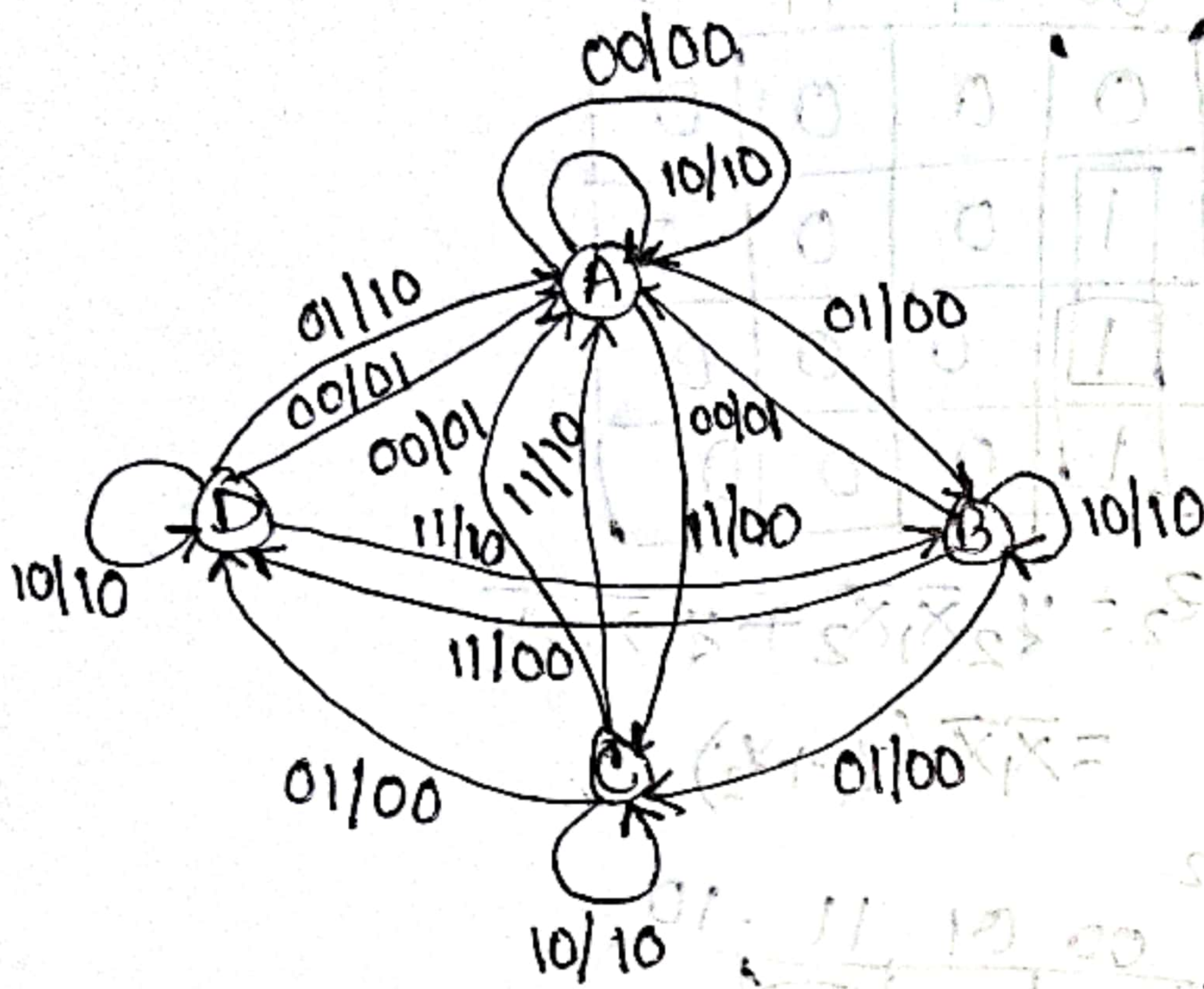


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Let us assume,

A  $\rightarrow$  0 tk  $\rightarrow$  00, Tk. 5  $\rightarrow$  01

B  $\rightarrow$  5 tk  $\rightarrow$  01, Tk. 10  $\rightarrow$  11

C  $\rightarrow$  10 tk  $\rightarrow$  10, Tk. 20  $\rightarrow$  10  
CHANGE  $\rightarrow$  00

D  $\rightarrow$  15 tk  $\rightarrow$  11

State Table:

| PS | 01   | 11   | 10   | 00   |
|----|------|------|------|------|
| A  | B/00 | C/00 | A/10 | A/00 |
| B  | C/00 | D/00 | B/10 | A/01 |
| C  | D/00 | A/10 | C/10 | A/01 |
| D  | A/10 | B/10 | D/10 | A/01 |

Transition Table

| $x_1 x_2$ | 01    | 11    | 10    | 00    |
|-----------|-------|-------|-------|-------|
| 01 00     | 01/00 | 10/00 | 00/10 | 00/00 |
| 01 01     | 10/00 | 11/00 | 01/10 | 00/01 |
| 10 01     | 11/00 | 00/10 | 10/10 | 00/01 |
| 11 01     | 00/10 | 01/10 | 11/10 | 00/01 |

Excitation Table:

| $x_1 x_2$ | $Y_1 Y_2$ | $Z_1 Z_2$ | $J_1$ | $K_1$ | $J_2$ | $K_2$ |
|-----------|-----------|-----------|-------|-------|-------|-------|
| 0 0       | 0 0       | 0 0       | 0 0   | —     | 0     | —     |
| 0 1       | 0 1       | 0 0       | 0 0   | —     | 1     | —     |
| 1 0       | 0 0       | 1 0       | 0 0   | —     | 0     | —     |
| 1 1       | 1 0       | 0 0       | 0 0   | —     | 0     | —     |
| 0 0       | 0 0       | 0 1       | 0 0   | —     | 1     | —     |
| 0 1       | 0 1       | 1 0       | 0 0   | —     | 1     | —     |
| 1 0       | 0 1       | 0 1       | 1 0   | —     | 1     | 0     |
| 1 1       | 1 1       | 0 0       | 0 0   | —     | 1     | 0     |



| $y_1, y_2$ | $x_1, x_2$ | $\gamma_1, \gamma_2$ | $z_1, z_2$ | $J_1, K_1$ | $J_2, K_2$ |
|------------|------------|----------------------|------------|------------|------------|
| 1 0        | 0 0        | 0 0                  | 0 1        | 1 1        | 0 1        |
| 1 0        | 0 1        | 1 1                  | 0 0        | 1 0        | 1 1        |
| 1 0        | 1 0        | 1 0                  | 1 0        | 1 0        | 0 1        |
| 1 0        | 1 1        | 0 0                  | 1 0        | 1 1        | 1 1        |
| 1 1        | 0 0        | 0 0                  | 0 1        | 1 1        | 1 1        |
| 1 1        | 0 1        | 0 0                  | 1 0        | 1 1        | 1 0        |
| 1 1        | 1 0        | 1 1                  | 1 0        | 1 0        | 1 0        |
| 1 1        | 1 1        | 0 1                  | 1 0        | 1 1        | 1 0        |



| $y_1, y_2 \backslash x_1, x_2$ | 00 | 01 | 11 | 10 |
|--------------------------------|----|----|----|----|
| 00                             | 0  | 0  | 0  | 1  |
| 01                             | 0  | 0  | 0  | 1  |
| 11                             | 0  | 1  | 1  | 1  |
| 10                             | 0  | 0  | 1  | 1  |

$$Z_1 = x_1 \bar{x}_2 + y_1 x_1 + y_1 y_2 x_2$$

| $y_1, y_2 \backslash x_1, x_2$ | 00 | 01 | 11 | 10 |
|--------------------------------|----|----|----|----|
| 00                             | 0  | 0  | 0  | 0  |
| 01                             | 1  | 0  | 0  | 0  |
| 11                             | 1  | 0  | 0  | 0  |
| 10                             | 1  | 0  | 0  | 0  |

$$Z_2 = y_2 \bar{x}_1 \bar{x}_2 + y_1 \bar{x}_1 \bar{x}_2 = \bar{x}_1 \bar{x}_2 (y_1 + y_2)$$

| $y_1, y_2 \backslash x_1, x_2$ | 00 | 01 | 11 | 10 |
|--------------------------------|----|----|----|----|
| 00                             | 0  | 0  | 0  | 1  |
| 01                             | 0  | 1  | 1  | 0  |
| 11                             | -  | -  | -  | -  |
| 10                             | -  | -  | -  | -  |

$$Z_1 = y_2 x_2 + \bar{y}_2 x_1 \bar{x}_2$$

| $y_1, y_2 \backslash x_1, x_2$ | 00 | 01 | 11 | 10 |
|--------------------------------|----|----|----|----|
| 00                             | -  | -  | -  | -  |
| 01                             | -  | -  | -  | -  |
| 11                             | 1  | 1  | 1  | 0  |
| 10                             | 1  | 0  | 1  | 0  |

$$K_1 = y_2 x_2 + \bar{x}_1 \bar{x}_2 + x_1 x_2$$

| $y_1, y_2 \backslash x_1, x_2$ | 00 | 01 | 11 | 10 |
|--------------------------------|----|----|----|----|
| 00                             | 0  | 1  | 0  | 0  |
| 01                             | -  | -  | -  | -  |
| 11                             | -  | -  | -  | -  |
| 10                             | 0  | 1  | 0  | 0  |

$$Z_2 = \bar{y}_1 x_2 + \bar{x}_1 x_2$$

$$= x_2 (\bar{y}_1 + \bar{x}_1) = \bar{x}_1 x_2$$

| $y_1, y_2 \backslash x_1, x_2$ | 00 | 01 | 11 | 10 |
|--------------------------------|----|----|----|----|
| 00                             | -  | -  | -  | -  |
| 01                             | 1  | 1  | 0  | 0  |
| 11                             | 1  | 1  | 0  | 0  |
| 10                             | -  | -  | -  | -  |

$$K_2 = \bar{x}_1$$