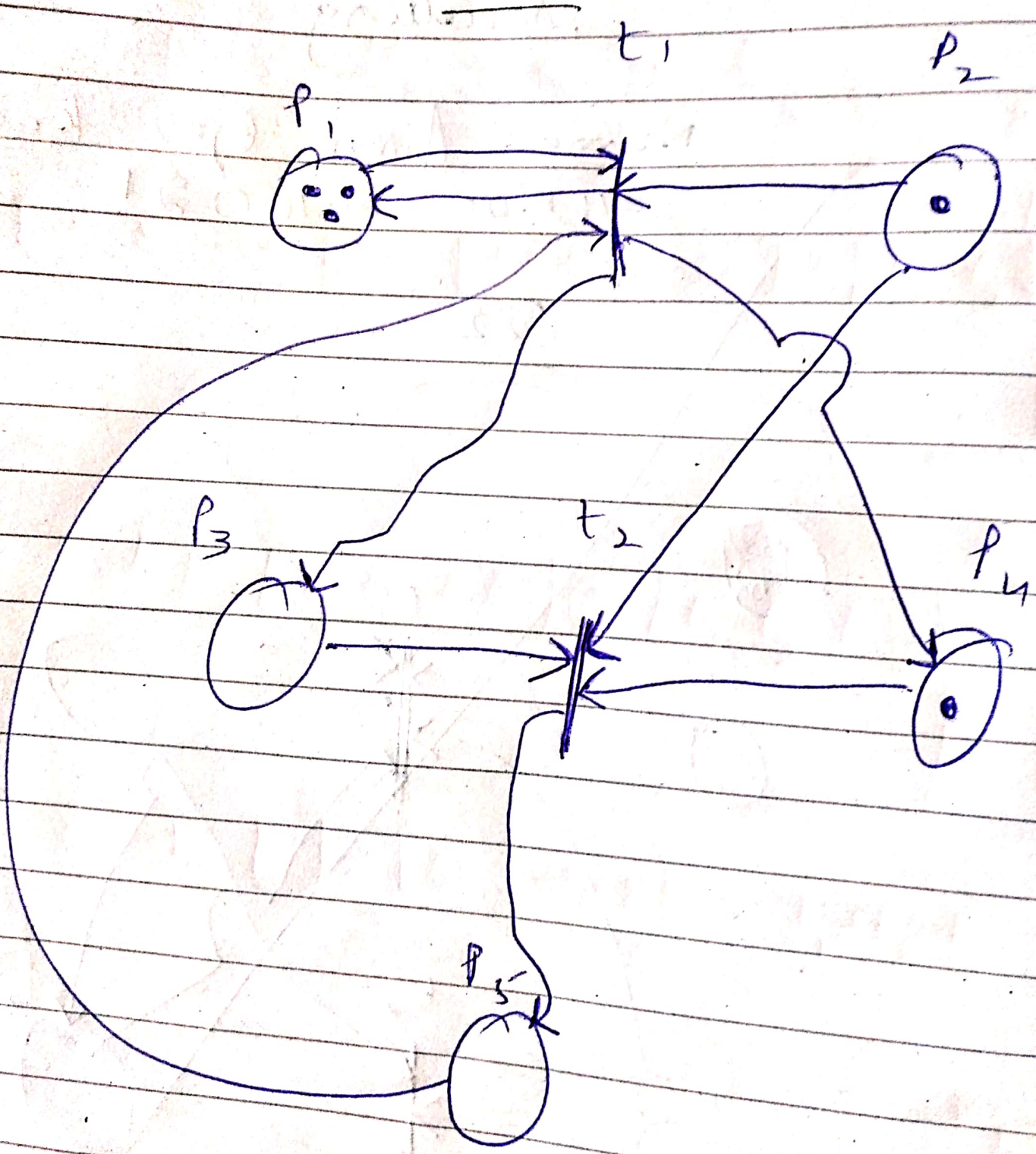
Aiman Ejaz Kazi

CS-021

Q2



Q1

$$M' = M_0 + \sigma \Delta$$

multiplication not possible with t_3 a transition

$$[1\ 8\ 0\ 1] = [1\ 0\ 1\ 0] + [t_1\ t_2\ t_3] \begin{bmatrix} 0 & -1 & -1 & 0 \\ 0 & 2 & 1 & -1 \\ 0 & 0 & -1 & 1 \end{bmatrix}$$

$$[1\ 8\ 0\ 1] - [1\ 0\ 1\ 0] = [t_1\ t_2\ t_3] \begin{bmatrix} 0 & -1 & -1 & 0 \\ 0 & 2 & 1 & -1 \\ 0 & 0 & -1 & 1 \end{bmatrix}$$

$$[0\ 8\ -1\ 1] = [0 \quad -t_1+2t_2 \quad -t_1+t_2-t_3 \quad -t_2+t_3]$$

$$2t_2 - t_1 = 8 \rightarrow (1)$$

$$t_2 - t_1 - t_3 = -1 \rightarrow (2)$$

$$t_3 - t_2 = 1 \rightarrow (3)$$

$t_1 = 0$

$t_2 = 4$

$t_3 = 5$

$$\sigma = \begin{pmatrix} 0 & 4 & 5 \end{pmatrix}$$

$$\sigma = t_2 t_2 t_2 t_2 t_3 t_3 t_3 t_3 t_3$$