

9431004

مسئله 4

سری 4

$$5F_{16} = (01011111) = 95_{10}$$

1

$$\rightarrow 95 - 62 = 33$$

$$(C2)_{16} = (11000010) = 62_{10}$$

$$\begin{array}{r} \begin{array}{ccccccc} & 1 & 1 & 1 & 1 & 1 & 1 \\ & 0 & 1 & 0 & 1 & 1 & 1 & 1 \\ + & 1 & 1 & 0 & 0 & 0 & 0 & 1 \\ \hline 1 & 0 & 0 & 1 & 0 & 0 & 0 & 1 \end{array} \\ \xrightarrow{\text{8 bit}} (33)_{10} \end{array}$$

سررین نداریم

$$y = y_3 y_2 y_1 \rightarrow 2y = y_3 y_2 y_1 0$$

2

$$x = x_3 x_2 x_1$$

$$S = x + y + 1 = x + 2y + 1 + 1 > (1111)_2 = 15 \rightarrow x + 2y > 13$$

$$\rightarrow \text{Carry} = 1$$

$$B = 0b_3b_2b_1 \rightarrow \bar{B} = 1\bar{b}_3\bar{b}_2\bar{b}_1$$

$$z = A + \bar{B} + 1 = A - B \quad \leftarrow \text{if } x + 2y > 13$$

$$\text{else if } \text{Carry} = 0 \rightarrow z = A + B + 0 = A + B \quad \text{else}$$

Ripple adder \rightarrow ۸ بیت رپل ریزر (3)

delay $\approx 8 \times 50$ \leftarrow Fulladder است که ۵۰ نانو
 $\approx 410 \text{ ns}$

Carry lookahead \rightarrow ~~Full~~ ~~adder~~

delay = Full adder + $\frac{C}{\text{سرعت}}$ = $50 + 150 = 200 \text{ ns}$

$R_{17} = 10 \text{ H}$, $R_{18} = 8 \text{ AH}$ (4) \leftarrow مقادیر مبدی و مقادیر

ADD $R_{17}, R_{18} \rightarrow R_{17} = 10 + 8 \text{ AH} = 9 \text{ AH} \rightarrow Z, V, C = 0, 0, 0$

ADD $R_{17}, R_{18} \rightarrow R_{17} = 9 \text{ AH} + 8 \text{ AH} = 25 \text{ H} \rightarrow Z, V, C = 0, 1, 1$

ADC $R_{17}, R_{18} \rightarrow R_{17} = 25 + 8 \text{ AH} + 1 = \text{B0} \rightarrow Z, V, C = 0, 0, 0$

SUB $R_{18}, R_{17} \rightarrow R_{18} = 8 \text{ AH} - \text{B0} = \text{2DAH} \rightarrow Z, V, C = 0, 1, 0$