CO HW9

1. Problem 5-13

XOR

D_0T_4 : $DR \leftarrow M[AR]$

D_0T_5 : $AC \leftarrow AC \oplus DR$,
$SC \leftarrow 0$

ADM

D_1T_4 : $DR \leftarrow M[AR]$

D_1T_5 : $DR \leftarrow AC$,
$AC \leftarrow AC + DR$

D_1T_6 : $M[AR] \leftarrow AC$,
$AC \leftarrow DR$,
$SC \leftarrow 0$

SUB

D_2T_4 : $DR \leftarrow M[AR]$

D_2T_5 : $DR \leftarrow AC$,
$AC \leftarrow DR$

D_2T_6 : $AC \leftarrow \overline{AC}$

D_2T_7 : $AC \leftarrow AC + 1$

D_2T_8 : $AC \leftarrow AC + DR$,
$SC \leftarrow 0$

XCH D_3T_4 : $DR \leftarrow M[AR]$

D_3T_5 : $AC \leftarrow AC$,
$AC \leftarrow DR$,
$SC \leftarrow 0$

SEQ D_4T_4 : $DR \leftarrow M[AR]$

D_4T_5 : $TR \leftarrow AC$,
$AC \leftarrow AC \oplus DR$

D_4T_6 : if $(AC = 0)$
then $(PC \leftarrow PC + 1)$,
$AC \leftarrow TR$,
$SC \leftarrow 0$

BPA D_5T_4 : if $(AC = 0 \wedge AC(15) = 0)$
then $(PC \leftarrow AR)$,
$SC \leftarrow 0$

2. Problem 5-16

a

b

c

T_0: $IR \leftarrow M[PC]$,
$PC \leftarrow PC+1$

T_1: $AR(0-7) \leftarrow M[PC]$,
$PC \leftarrow PC+1$

T_2: $AR(8-15) \leftarrow M[PC]$,
$PC \leftarrow PC+1$

T_3 $DR \leftarrow M[AR$

3. Problem 5-18

a

BUN 2300

b

ION

BUN 0 I // branch indirect to 0