2) GTC Wave.

(Input) A	B	C	Y (output)
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	0
1	0	1	0
1	1	1	0

first line (1) W_1

① $A=0$ $\bar{A}=1$

$B=0$ $\bar{B}=1$

$C=0$

W_1 [1]

② $\bar{A}=1$

$\bar{B}=0$

$\bar{C}=1$

W_2 [0]

③ $\overline{(A+C)}$ W_3 [0]

$Y = W_1 + W_2 + W_3$

$= 1+0+0$

$= [1]$

Using Truth Table (AND, OR)

second line (2) $A=0$ $\bar{A}=1$ W_1

① $B=0$ $\bar{B}=1$ [1]

$C=1$

$\bar{A}=1$ W_2

② $B=0$

$\bar{C}=0$ [0]

③ $\overline{(A+C)}$ W_3

$A=0$

$C=0$ [1]

$Y = W_1 + W_2 + W_3$

$= 1+0+1$

$= [1]$

Third Line $A = 0$, $B = 1$, $C = 0$

$A'B' = 10$ $\quad W_1 = \boxed{0}$ $\quad A'BC' = 111$ $\quad W_2 = \boxed{1}$

$\overline{(A+\bar{C})} \Rightarrow W_3 = \boxed{0}$ (01)

$Y = 0+1+0 = T = \boxed{1}$

Forth Line $A = 0$, $B = 1$, $C = 1$

$A'B' = 10$ $\quad W_1 = \boxed{0}$ $\quad A'BC' = 110$ $\quad W_2 = \boxed{0}$

$\overline{(A+\bar{C})} \Rightarrow W_3 = \boxed{1}$ (00)

$Y = 0+0+1 = T = \boxed{1}$

Fifth Line $A = 1$, $B = 0$, $C = 0$

$A'B' = 01$ $\quad W_1 = \boxed{0}$ $\quad A'BC' = 001$ $\quad W_2 = \boxed{0}$

$\overline{(A+\bar{C})}$ $\quad W_3 = \boxed{0}$ (11)

$Y = 0+0+0 = \text{False} = \boxed{0}$

Sixth Line $A = 1$, $B = 0$, $C = 1$

$A'B' = 01$ $\quad W_1 = \boxed{0}$ $\quad A'BC' = 000 \Rightarrow W_2 = \boxed{0}$

$\overline{(A+\bar{C})} \Rightarrow W_3 = \boxed{0}$ (10)

$Y = 0+0+0 = \text{False} = \boxed{0}$

Seventh Line $A = 1$, $B = 1$, $C = 1$

$A'B' = 00$ $\quad W_1 = \boxed{0}$ $\quad A'BC' = 010$ $\quad W_2 = \boxed{0}$

$\overline{(A+\bar{C})} \Rightarrow W_3 = \boxed{0}$ (10)

$Y = 0+0+0 = \text{False} = \boxed{0}$

3) $Y = \bar{A}\bar{B} + \bar{A}B\bar{C} + \overline{(A+\bar{C})}$

$= A'B' + A'BC' + A''C$ T7

$= A'B' + A'BC' + A'C$ T4

$= A'(B' + BC' + C)$ T8

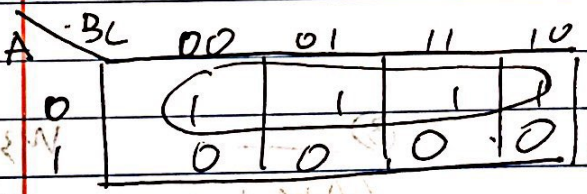
$= A'(B' + BC' + C(B+B'))$ T5

$= A'(B'(1+C) + B(C+C'))$

$= A'(B' + B) = A'1$

4) K-map

A	B	C	A'B'	A'BC'	(A+C')'	Y
0	0	0	1	0	0	1
0	0	1	1	0	0	1
0	1	0	0	1	0	1
0	1	1	0	0	0	1
1	0	0	0	0	0	0
1	0	1	0	0	0	0
1	1	0	0	0	0	0
1	1	1	0	0	0	0



$\Rightarrow Y = A'$

5) From the output K-map table above, we can prove that whenever the Y's value is 1, the A's value is 0.
the Y's value is 0, the A's value is 1

So $Y = A'$

GTk output truth table

A	B	C	A'	Y
0	0	0	1	1
0	0	1	1	1
0	1	0	1	1
0	1	1	1	1
1	0	0	0	0
1	0	1	0	0
1	1	0	0	0
1	1	1	0	0

So we can see for each like

$Y = A'$