

- Q3-1 and Q3-3 :

$$F=(abc)+d=(\sim a+\sim b+\sim c).\sim d$$

$$F=(a+b).(b+d).(c+d)=(\sim a.\sim d)+(\sim b.\sim d)+(\sim c.\sim d)$$

- Q3-2 and Q3-3 :

$$F=(a+b+c).d=(\sim a.\sim b.\sim c)+\sim d$$

$$F=(\sim a+\sim d).(\sim b+\sim d).(\sim c+\sim d)$$

- Q3-1

$$TO1=\text{Max}(15, 10) = 15$$

$$TO0-\text{Max}(8, 21) = 21$$

- Q3-2

$$TO1=\text{Max}(10, 15) = 15$$

$$TO0-\text{Max}(12, 14) = 14$$

- Q3-3

$$TO1=\text{Max}(12, 18) = 18$$

$$TO0-\text{Max}(10, 24) = 24$$

- Q3-4

$$TO1=\text{Max}(12, 18) = 18$$

$$TO0-\text{Max}(16, 15) = 16$$