

$$a+b=1$$

$$ab=0$$

<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>F</u>	m	Max term min term
0	0	0	0	$\overline{1} \rightarrow ab'cd'$	m <sub>1</sub>	
0	0	0	1	0	m <sub>2</sub>	
0	0	1	0	1 $\rightarrow a'b'cd$	m <sub>3</sub>	
0	0	1	1	0	m <sub>4</sub>	
0	1	0	0	1 $\rightarrow a'b'cd$	m <sub>5</sub>	
0	1	0	1	1 $\rightarrow a'b'cd$	m <sub>6</sub>	
0	1	1	0	1 $\rightarrow a'b'cd'$	m <sub>7</sub>	
0	1	1	1	0	m <sub>8</sub>	
1	0	0	0	0	m <sub>9</sub>	
1	0	0	1	1 $\rightarrow ab'cd'$	m <sub>10</sub>	
1	0	1	0	1 $\rightarrow a'b'cd'$	m <sub>11</sub>	
1	1	0	0	0	m <sub>12</sub>	
1	1	0	1	1 $\rightarrow ab'cd'$	m <sub>13</sub>	
1	1	1	0	0	m <sub>14</sub>	
1	1	1	1	1 $\rightarrow ab'cd$	m <sub>15</sub>	

Sum of minterms  $\Sigma (1, 3, 5, 6, 9, 10, 12, 15)$

Product of maxterm  $\Pi (1, 2, 4, 7, 8, 11, 13, 14)$

$$F = \underline{a'b'cd'} + \underline{a'b'cd} + \underline{a'bc'd} + \underline{a'bc'd'} + \underline{ab'c'd} + \\ \underline{ab'c'd'} + \underline{abc'd'} + abc'd$$

$$F = a'b' (c'd' + cd) + c'd (a'b + ab') + cd' (a'b + ab') + \\ ab(c'd' + cd)$$

F