2.(b)

It can be seen from the truth table that A_3 & D_0 are identical,

$$\therefore \boxed{D_0 = A_3}$$

For D_1,

For $A_0A_1A_2 = 000$, we have the following expression

$$f_{000}(A_3, A_4, A_5, A_6) = \Sigma m(3,7) + d(2,4,5,6,8,9,10,11,12,13,14)$$

(Note: All the combination not mentioned in the truth table can be considered as 'don't care'.)

$A_3A_4 \backslash A_5A_6$	00	01	11	10
00	0_0	0_1	1_3	X_2
01	X_4	X_5	1_7	X_6
11	X_{12}	X_{13}	0_{15}	X_{14}
10	X_8	X_9	X_{11}	X_{10}

$$f_{000} = \bar{A}_3 A_5$$

For $A_0A_1A_2 = 001$,

$$f_{001} = (A_3, A_4, A_5, A_6) = d(2,4,5,6,8,9,10,11,12,14,1,3,7,0)$$

$$\therefore f_{001} = 0$$

~~f_{011} f_{111}~~

$f_{011} = \Sigma m(15) + d(0,1,2,3,4,5,7,8,9,10,11,12,13,14)$

$A_3A_4 \backslash A_5A_6$	00	01	11	10
00	X	X	X	X
01	X	X	X	X
11	X	X	1	X
10	X	X	X	X

$f_{011} = 1$

IIly, $f_{111} = 1$

$$\therefore D_1 = \bar{A}_0\bar{A}_1\bar{A}_2(\bar{A}_3 A_5) + \bar{A}_0\bar{A}_1 A_2(0) + \bar{A}_0 A_1 A_2(1) + A_0 A_1 A_2(1)$$

$$\boxed{D_1 = \bar{A}_0\bar{A}_1\bar{A}_2\bar{A}_3 A_5 + \bar{A}_0 A_1 A_2 + A_0 A_1 A_2}$$

For D_2,

$f_{000} = \Sigma m(1,7) + d(2,4,5,6,8,9,10,11,12,13,14)$

$A_3A_4 \backslash A_5A_6$	00	01	11	10
00	0	1	0	X
01	X	X	1	X
11	X	X	0	X
10	X	X	X	X

$f_{000} = \bar{A}_5 A_6 + \bar{A}_3 A_4$

$f_{001} = 1$

$f_{011} = 0$

$f_{111} = 1$

$$\therefore \boxed{D_2 = \bar{A}_0\bar{A}_1\bar{A}_2(\bar{A}_5 A_6 + \bar{A}_3 A_4) + \bar{A}_0\bar{A}_1 A_2 + \bar{A}_0 A_1 A_2}$$