L=(00010,00011,00101,01000,01001,01010,01011,01100,01101,01111,10001,10010,10011,10100,10101,11011)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| С0\*С0 | 00010 | 00010 | 00101 | 01000 | 01001 | 01010 | 01011 | 01100 | 01101 | 01111 | 10001 | 10010 | 10011 | 10100 | 10101 | 11011 |
| 00010 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 00011 | 0001y | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 00101 |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 01000 |  |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |
| 01001 |  |  |  | 0100y | - |  |  |  |  |  |  |  |  |  |  |  |
| 01010 | 0y010 |  |  | 010y0 |  | - |  |  |  |  |  |  |  |  |  |  |
| 01011 |  | 0y011 |  |  | 010y1 | 0101y | - |  |  |  |  |  |  |  |  |  |
| 01100 |  |  |  | 01y00 |  |  |  | - |  |  |  |  |  |  |  |  |
| 01101 |  |  | 0y101 |  | 01y01 |  |  | 0110y | - |  |  |  |  |  |  |  |
| 01111 |  |  |  |  |  |  | 01y11 |  | 011y1 | - |  |  |  |  |  |  |
| 10001 |  |  |  |  |  |  |  |  |  |  | - |  |  |  |  |  |
| 10010 | y0010 |  |  |  |  |  |  |  |  |  |  | - |  |  |  |  |
| 10011 |  | y0011 |  |  |  |  |  |  |  |  | 100y1 | 1001y | - |  |  |  |
| 10100 |  |  |  |  |  |  |  |  |  |  |  |  |  | - |  |  |
| 10101 |  |  | y0101 |  |  |  |  |  |  |  | 10y01 |  |  | 1010y | - |  |
| 11011 |  |  |  |  |  |  | y1011 |  |  |  |  |  | 1y011 |  |  | - |
| А1 | 0001x  0x010  x0010 | 0x011  X0011 | 0x101  X0101 | 0100x  010x0  01x00 | 010x1  01x01 | 0101x | 01x11  X1011 | 0110x | 011x1 | Ø | 100x1  10x01 | 1001x | 1x011 | 1010x | Ø | Ø |

**A1 = { 0001x; 0x010; x0010; 0x011; x0011; 0x101; x0101; 0100x; 010x0; 01x00; 010x1; 01x01; 0101x; 01x11; x1011; 0110x; 011x1; 100x1; 10x01; 1001x; 1x011; 1010x }**

##### Z0 = { Ø }

##### C1 = { 0001x; 0x010; x0010; 0x011; x0011; 0x101; x0101; 0100x; 010x0; 01x00; 010x1; 01x01; 0101x; 01x11; x1011; 0110x; 011x1; 100x1; 10x01; 1001x; 1x011; 1010x }

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| С1\*С1 | 0001x | 0x010 | X0010 | 0x011 | X0011 | 0x101 | X0101 | 0100x | 010x0 | 01x00 | 010x1 | 01x01 | 0101x | 01x11 | X1011 | 0110x | 011x1 | 100x1 | 10x01 | 1001x | 1x011 | 1010x |
| 0001x | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0x010 |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| X0010 |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0x011 |  | 0x01y |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| X0011 |  |  | X001y |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0x101 |  |  |  |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| X0101 |  |  |  |  |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0100x |  |  |  |  |  |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 010x0 |  |  |  |  |  |  |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 01x00 |  |  |  |  |  |  |  |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |
| 010x1 |  |  |  |  |  |  |  |  | 010xy |  | - |  |  |  |  |  |  |  |  |  |  |  |
| 01x01 |  |  |  |  |  |  |  |  |  | 01x0y |  | - |  |  |  |  |  |  |  |  |  |  |
| 0101x | 0y01x |  |  |  |  |  |  | 010yx |  |  |  |  | - |  |  |  |  |  |  |  |  |  |
| 01x11 |  |  |  |  |  |  |  |  |  |  |  | 01xy1 |  | - |  |  |  |  |  |  |  |  |
| X1011 |  |  |  |  | Xy011 |  |  |  |  |  |  |  |  |  | - |  |  |  |  |  |  |  |
| 0110x |  |  |  |  |  |  |  | 01y0x |  |  |  |  |  |  |  | - |  |  |  |  |  |  |
| 011x1 |  |  |  |  |  |  |  |  |  |  | 01yx1 |  |  |  |  |  | - |  |  |  |  |  |
| 100x1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | - |  |  |  |  |
| 10x01 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | - |  |  |  |
| 1001x | Y001x |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | - |  |  |
| 1x011 |  |  |  | Yx011 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | - |  |
| 1010x |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | - |
| А2 | 0x01x  X001x | 0x01x | X001x | Xx011 | Xx011 | Ø | Ø | 010xx  01x0x | 010xx | 01x0x | 01xx1 | 01xx1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |

##### A2 = { 0x01x; x001x; xx011; 010xx; 01x0x; 01xx1 }

##### Z1 = { 0x101; x0101; 100x1; 10x01; 1010x }

##### C2 = { 0x01x; x001x; xx011; 010xx; 01x0x; 01xx1 }

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| С2\*С2 | 0x01x | X001x | Xx011 | 010xx | 01x0x | 01xx1 |
| 0x01x | - |  |  |  |  |  |
| X001x |  | - |  |  |  |  |
| Xx011 |  |  | - |  |  |  |
| 010xx |  |  |  | - |  |  |
| 01x0x |  |  |  |  | - |  |
| 01xx1 |  |  |  |  |  | - |
| А3 | Ø | Ø | Ø | Ø | Ø | Ø |

##### A3 = { Ø }

##### Конечное множество простых импликант Z = { 0x101; x0101; 100x1; 10x01; 1010x; 0x01x; x001x; xx011; 010xx; 01x0x; 01xx1 }

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| z#(Z-z) | 0x101 | X0101 | 100x1 | 10x01 | 1010x | 0x01x | X001x | Xx011 | 010xx | 01x0x | 01xx1 |
| 0x101 | - | 1zzzz  10101 | yzy1z  100x1 | yz0zz  10x01 | yzzz0  1010x | zzyy0  0x01x | 1zyy0  x001x | 1zyyz  xx011 | zzy10  010xx | zz0z0  0100x  01x00 | zz01z  010x1  01x11 |
| X0101 | z1zzz  01101 | - | zzy1z  100x1 | zz0zz  10001 | zzzz0  10100 | z1yy0  0x01x | zzyy0  x001x | z1yyz  xx011 | zzy10  010xx | zyyz0 zy0z0  0100x 01x00 | zyz1z zy01z  01x11 010x1 |
| 100x1 | yyy1z  01101 | z0zyzz  10101 | - | zzzzz  Ø | zzyzy  10100 | y1zzz  0x01x | 0zzz0  0001x  x0010 | 01zzz  0x011  x1011 | yyzzz  010xx | yy1z0 yy1z0  0100x 01x00 | yy1zz yyzzz  01x11 010x1 |
| 10x01 | yyzzz  01101 | zzzzz  Ø | zzz1z  10011 | - | zzzzy  10100 | y1zyz  0x01x | yzzy0 0zzyy  0001x x0010 | x1zyz 0yzyz  0x011 x1011 | yyz1z  010xx | yyzz0 yyzz0  0100x 01x00 | yyzyz yy11z  01x11 010x1 |
| 1010x | yyzzz  01101 | Ø | zzyyz  10011 | Ø | - | y1zyz  0x01x | yzyyz 0zyyz  0001x x0010 | y1yyz 0yyyz  0x011 x1011 | yyy1z  010xx | yy0zz yy0zz  0100x 01x00 | yy0yz yyy1z  01x11 010x1 |
| 0x01x | zzyyz  01101 | Ø | yzzzz  10011 | Ø | yzyyz  10100 | - | zzzzz 1zzzz  Ø 10010 | zzzzz 1zzzz  Ø 11011 | zzz0z  0100x | zzzyz zzyyz  0100x 01x00 | zz1zz zzz0z  01111 01001 |
| X001x | zyyyz  01101 | Ø | zzzzz  Ø | Ø | yzyyz  10100 | y1zzz  0101x | - | zyzzz  11011 | zyzyz  0100x | zyzyz zy1yz  0100x 01x00 | zyyzz zyzyz  01111 01001 |
| Xx011 | zzyyz  01101 | Ø | Ø | Ø | zzyyy  10100 | zzzz1  01011 | zzzzy  10010 | - | zzzyz  0100x | zzzyz zz1yy  0100x 01x00 | zzyzz zzzyz  01111 01001 |
| 010xx | zzyzz  01101 | Ø | Ø | Ø | yyyzz  10100 | zzzzz  Ø | yyzzz  10010 | yzzzz  11011 | - | zzzzz zz1zz  Ø 01100 | zzyzz zzzzz  01111 Ø |
| 01x0x | zzzzz  Ø | Ø | Ø | Ø | yyzzz  10100 | Ø | yyzyz  10010 | yzzyz  11011 | zzzzz  Ø | - | Zzzyz  01111 |
| 01xx1 | Ø | Ø | Ø | Ø | yyzzy  10100 | Ø | yyzzy  10010 | yzzzz  11011 | Ø | zzzzy  01100 | - |
| Остаток | Ø | Ø | Ø | Ø | 10100 | Ø | 10010 | 11011 | Ø | 01100 | 01111 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| z#(Z-z)n L | 00010 | 00011 | 00101 | 01000 | 01001 | 01010 | 01011 | 01100 | 01101 | 01111 | 10001 | 10010 | 10011 | 10100 | 10101 | 11011 |
| 10100 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 10100 | Ø | Ø |
| 10010 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 10010 | Ø | Ø | Ø | Ø |
| 11011 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 11011 |
| 01100 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 01100 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| 01111 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 01111 | Ø | Ø | Ø | Ø | Ø | Ø |

##### Множество L-экстремалей E = { 1010x; x001x; xx011; 01x0x; 01xx1 }

##### Z´ = Z - E = { 0x101; x0101; 100x1; 10x01; 0x01x; 010xx }

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| L#E | 00010 | 00011 | 00101 | 01000 | 01001 | 01010 | 01011 | 01100 | 01101 | 01111 | 10001 | 10010 | 10011 | 10100 | 10101 | 11011 |
| 1010x | 00010 | 00011 | 00101 | 01000 | 01000 | 01010 | 01011 | 01100 | 01101 | 01111 | 10001 | 10010 | 10011 | Ø | Ø | 11011 |
| X001x | Ø | Ø | 00101 | 01000 | 01000 | 01010 | 01011 | 01100 | 01101 | 01111 | 10001 | Ø | Ø | Ø | Ø | 11011 |
| Xx011 | Ø | Ø | 00101 | 01000 | 01000 | 01010 | Ø | 01100 | 01101 | 01111 | 10001 | Ø | Ø | Ø | Ø | Ø |
| 01x0x | Ø | Ø | 00101 | Ø | Ø | 01010 | Ø | Ø | Ø | 01111 | 10001 | Ø | Ø | Ø | Ø | Ø |
| 01xx1 | Ø | Ø | 00101 | Ø | Ø | 01010 | Ø | Ø | Ø | Ø | 10001 | Ø | Ø | Ø | Ø | Ø |
|  | Ø | Ø | 00101 | Ø | Ø | 01010 | Ø | Ø | Ø | Ø | 10001 | Ø | Ø | Ø | Ø | Ø |

##### Множество кубов, непокрываемых L-экстремалями, L´ = L # E = { 00101; 01010; 10001 }

|  |  |  |  |
| --- | --- | --- | --- |
| Z’nL’ | 00101 | 01010 | 10001 |
| 0x101 | 00101 | 01yyy  Ø | Y0y01  Ø |
| X0101 | 00101 | 0yyyy  Ø | 10y01  Ø |
| 100x1 | Y0y01  Ø | Yy01y  Ø | 10001 |
| 10x01 | Y0101  Ø | Yy0yy  Ø | 10001 |
| 0x01x | 00yy1  Ø | 01010 | Y00y1  Ø |
| 010xx | 0yy01  Ø | 01010 | Yy001  Ø |

##### Fmin = { x0101; 100x1; 0x01x; 1010x; x001x; xx011; 01x0x; 01xx1}