**Tugas Presentasi Kelompok Logmat D3IF40-02 :**

1. Diketahui sebuah fungsi :

f (w,x,y,z) = y’z + wxy’ **kelompok 1 dan 2**

f(x y z) = x’yz’ + x’yz + xyz’ + xyz **kelompok 3 dan 4**

*f*(x,y,z) = y’(xz’ + z) **kelompok 5 dan 6**

*f*(x,y,z) = y(x’z + x) **kelompok 7 dan 8**

Tentukan bentuk SOP dan POS nya dari fungsi-fungsi di atas

1. Nyatakan tabel kebenaran di bawah ini dalam bentuk kanonik SOP dan POS berikut:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. **(kelompok 1 sampai 4)**  |  |  |  |  | | --- | --- | --- | --- | | *X* | *Y* | *z* | *f*(*x*, *y*, *z*) | | 0  0  0  0  1  1  1  1 | 0  0  1  1  0  0  1  1 | 0  1  0  1  0  1  0  1 | 1  1  0  0  1  0  1  0 | | 1. **(kelompok 5 sampai 8)**  |  |  |  |  | | --- | --- | --- | --- | | *X* | *y* | *z* | *f*(*x*, *y*, *z*) | | 0  0  0  0  1  1  1  1 | 0  0  1  1  0  0  1  1 | 0  1  0  1  0  1  0  1 | 1  0  0  1  1  0  1  1 | |

1. Sederhanakanlah fungsi Boolean berikut menggunakan Aljabar Boolean
2. f(x, y) = x + x’y **kelompok 1 dan 2**
3. f(x, y, z) = x’y’z + x’yz + xy’ **kelompok 3 dan 4**
4. f(x, y, z) = xy + x’z + yz = xy + x’z + yz(x + x’) **kelompok 5 dan 6**
5. f(x,y,z) = xyz + xyz’+ x’yz+ x’yz’ **kelompok 7 dan 8**
6. Selesaikan persamaan berikut ini dengan menggunakan K-Map :

**(Kelompok 1 dan 2) :**

f(x,y,z) = xyz + xyz’+ x’yz+ x’yz’

f(x,y,z) = x’y’z’ + x’yz’ + xy’z’ + xy’z + xyz’ +xyz

**(Kelompok 3 dan 4) :**

f(x,y,z) = x’y’z’ + x’y’z + x’yz + x’yz’ + xy’z’ + xyz’

f(x,y,z) = xyz + xyz’ + xy’z + x’yz + x’yz’ +xy’z’ + x’y’z’

**(Kelompok 5 dan 6) :**

f(w,x,y,z) = wxyz+ wxyz’+ wxy’z+ wx’yz+ wx’yz’+w’xyz+ w’x’yz+ w’x’yz’+ w’ x’y’z

f(w,x,y,z) = wx’ + wxy’z’ + wxyz’ + x’z’

**(Kelompok 7 dan 8) :**

f(w,x,y,z) = Σm(0, 1, 2, 3, 4, 6, 8, 9, 10, 11, 12, 13, 14)

f(w,x,y,z) = Σm(1, 2, 3, 7, 9, 11, 12, 13, 14, 15)

1. Tentukan bentuk sederhana (dalam bentuk SOP) dari fungsi Boolean dengan menggunakan peta Karnaugh jika diketahui tabel kebenarannya berikut ini : **(kelompok 5 sampai 8)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a.   |  |  |  |  | | --- | --- | --- | --- | | *X* | *Y* | *z* | *f*(*x*, *y*, *z*) | | 0  0  0  0  1  1  1  1 | 0  0  1  1  0  0  1  1 | 0  1  0  1  0  1  0  1 | 1  1  0  0  1  0  1  0 | | b.   |  |  |  |  | | --- | --- | --- | --- | | *x* | *y* | *Z* | *f*(*x*, *y*, *z*) | | 0  0  0  0  1  1  1  1 | 0  0  1  1  0  0  1  1 | 0  1  0  1  0  1  0  1 | 1  0  0  1  1  0  1  1 | |

1. Tentukan bentuk sederhana (dalam bentuk POS) dari fungsi Boolean dengan menggunakan peta Karnaugh jika diketahui tabel kebenarannya berikut ini : **(kelompok 1 sampai 4)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a.   |  |  |  |  | | --- | --- | --- | --- | | *x* | *Y* | *z* | *f*(*x*, *y*, *z*) | | 0  0  0  0  1  1  1  1 | 0  0  1  1  0  0  1  1 | 0  1  0  1  0  1  0  1 | 1  1  0  0  1  0  1  0 | | b.   |  |  |  |  | | --- | --- | --- | --- | | *x* | *Y* | *z* | *f*(*x*, *y*, *z*) | | 0  0  0  0  1  1  1  1 | 0  0  1  1  0  0  1  1 | 0  1  0  1  0  1  0  1 | 1  0  0  1  1  0  1  1 | |

**&&&&&&&&&& Selamat Belajar &&&&&&&&&&**