

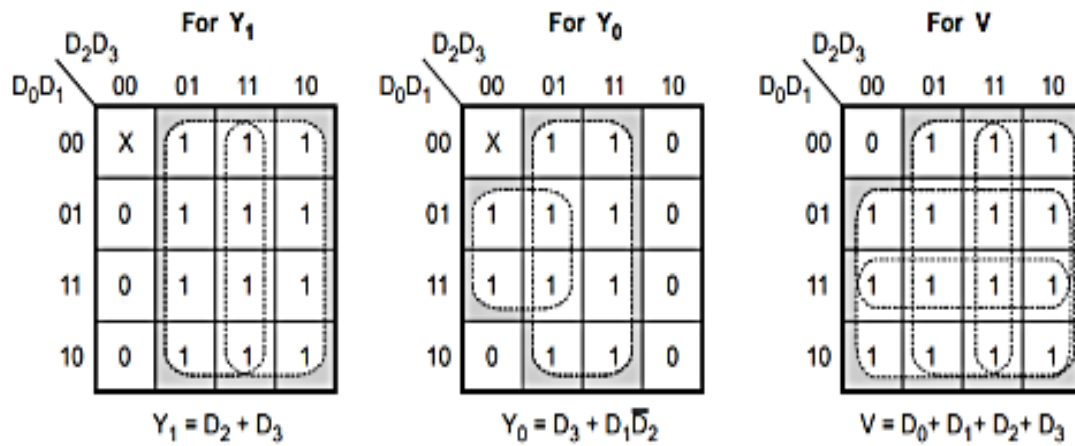
Priority Encoder:

- A priority encoder is an encoder circuit that includes the priority function. In priority encoder, if two or more inputs are equal to 1 at the same time, the input having the highest priority will take precedence.
- Table shows D₃ input with highest priority and D₀ input with lowest priority. When D₃ input is high, regardless of other inputs output is 11. The D₂ has the next priority. Thus, when D₃ = 0 and D₂ = 1, regardless of other two lower priority input, output is 10. The output for D₁ is generated only if higher priority inputs are 0, and so on. The output V (a valid output indicator) indicates, one or more of the inputs are equal to 1. If all inputs are 0, V is equal to 0, and the other two outputs (Y₁ and Y₀) of the circuit are not used.

Truth table of 4-bit priority :

Inputs				Outputs		
D ₀	D ₁	D ₂	D ₃	Y ₁	Y ₀	V
0	0	0	0	X	X	0
1	0	0	0	0	0	1
X	1	0	0	0	1	1
X	X	1	0	1	0	1
X	X	X	1	1	1	1

K-MAP SIMPLIFICATION :



LOGIC DIAGRAM :

