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ON LINE LECTURE
NOTES FOR.

M. Sc. II sem Physics.

Paper :- MPHY CC-7

Unit :- 4. Digital Electronics

Topic :- K- Map.

B ii) **KARNAUGH'S MAP** * The Karnaugh's map also called __Karnaugh Veitch map__ is a method of simplifying Boolean functions in a systematic mathematical way. Though this method can be used for a function of any number of variables but its use is restricted to the functions of upto 5 variables.

In fact Karnaugh map is another way of presenting the information given by the truth table. In this map method a group of squares are drawn. All these squares are designated in a particular way. Each square of the map represents a minterm. We shall first consider two variables Karnaugh map and then extend this concept to functions of more than two variables. It basically provides a 'cook-book' approach. It is graphical technique.

__MAP - FORMAT__. K-map is composed of an arrangement of adjacent cells each representing one particular combination of variables. Since the total no. of combination of n-variable and their complements is 2^n, the K-map consists of 2^n cells.

for 2 variables — No. of cells = 4
for 3 variables — No. of cells = 8
for 4 " = 2 "- " = 16
for 5 " — " " = 32
for 6 " — " " = 64.

No. of cells = No. of combination of variables.
for each row of truth table, there is one specific cell in K-map.

The variables to the left of
row to column applies for each cells as the variable of the variable
above the column applies for of cells that column.