Department of Computer Science and Engineering
BRAC University
CSE 260: Digital Logic Design

Experiment # 4

Applications of Kmap method

Objective:

- To investigate the rules of kmap
- To gain experience working with practical circuits
- To simplify a complex function using kmap

Required Components and Equipments

1. AT-700 Portable Analog/Digital Laboratory
2. AND, OR, NOT, XOR IC

Function:

1. **$F(A,B,C,D)=\sum(1,3,9,10,11,13,15)$**
2. **$F(A,B,C,D)=\sum(1,4,15)+d(3,5,7,12,13,14)$ [Homework]**

Procedure:

- Simplify the function using kmap and Construct the Circuit of these function, on the breadboard of AT-700.
- Remember each IC's pin 14 connected to "+5V" position of DC Power Supply of AT-700, and pin 7 connected to "GND" position.
- Connect the inputs to Data switches and outputs to any position of LED Display.
- Find out the outputs for all possible combinations of input states.
- Write down the input-output in tabular form.

Report:

The report should cover the followings

1. Name of the Experiment
2. Objective
3. Required Components and Equipments
4. Experimental Setup [Circuit Diagrams]
5. Results (K-Map) and Discussions .The discussions part must include the answers of the following questions:

- What is the Boolean Equation for the output?