

**Spring 2016 - CS2420**  
**Homework 5**  
**Due Date : October 19<sup>th</sup> , 2016**

**No later than 12:45 pm**

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1. Simplify the following Boolean function, using three-variable K-maps (10 pts)

$$F(x, y, z) = \Sigma(0, 1, 2, 5, 6)$$

2. Simplify the following Boolean function, using four-variable K-maps (10 pts)

$$F(w, x, y, z) = \Sigma(0, 1, 2, 3, 8, 9, 12, 13, 14)$$

3. Simplify the following Boolean function F, together with the don't care conditions d (15 pt) :

$$F(A, B, C, D) = \Sigma_m(1, 5, 9, 11, 13, 15)$$

$$d(A, B, C, D) = \Sigma d(4, 7, 12, 14)$$

4. Simplify the following Boolean function, using four-variable K-maps .  
Construct the truth table for this function ( 15 pts )

$$F = A'D(B'+C) + A'D'(B+C') + (B'+C)(B+C')$$

## Remarks :

- The homework does not have to be typed , however , it must be written using **pencils** only . Include the following information on **the top left** hand side of the first page :-
  - Your Name :
  - Your Roster or Serial Number :
  - Homework Number : 5
  - Due Date : October 19<sup>th</sup> , 2016
- **Make sure that you write the question first then followed by your answer.**
- The homework must also be uploaded using homework upload no later than the end of class time on the due date. Use the following name format for your file name  
**LastName\_FirstName\_CS2420-A5.zip or  
LastName\_FirstName\_CS2420-A5.pdf or  
LastName\_FirstName\_CS2420-A5.doc**
- For each question , you must **show** all your work.
- **Missing ANY of the above items from your assignment will result in deducting 40% of the assignment grade. NO EXCEPTIONS.**

Turn in hard copy of your assignment no later than the end of class time on the due date. The hard copy must be **stapled**. **No Late assignment will be accepted and a grade of zero will be assigned.** If you are absent on the assignment's due date , a grade of zero will be recorded .

- **Copying the assignment from others will result in grade ZERO.**