COE 561, Term 091

Digital System Design and Synthesis

HW# 1 Solution

Due date: Sunday, Nov. 1

# Consider the following OBDD with the variable ordering {a, b, c, d}. Reduce it based on **Reduce** function to obtain the ROBDD. Show the details of your work.

# 

# Consider the function f=(a+bc)(d+b’c’):

## Draw the **ROBDD** for the functionusing the variable order {a, b, c, d}.

## Draw the **ROBDD** for the functionusing the variable order {a, d, b, c}.

# Consider the two functions f=(a+bc)(d+b’c’) and g=(a+d)(b+c):

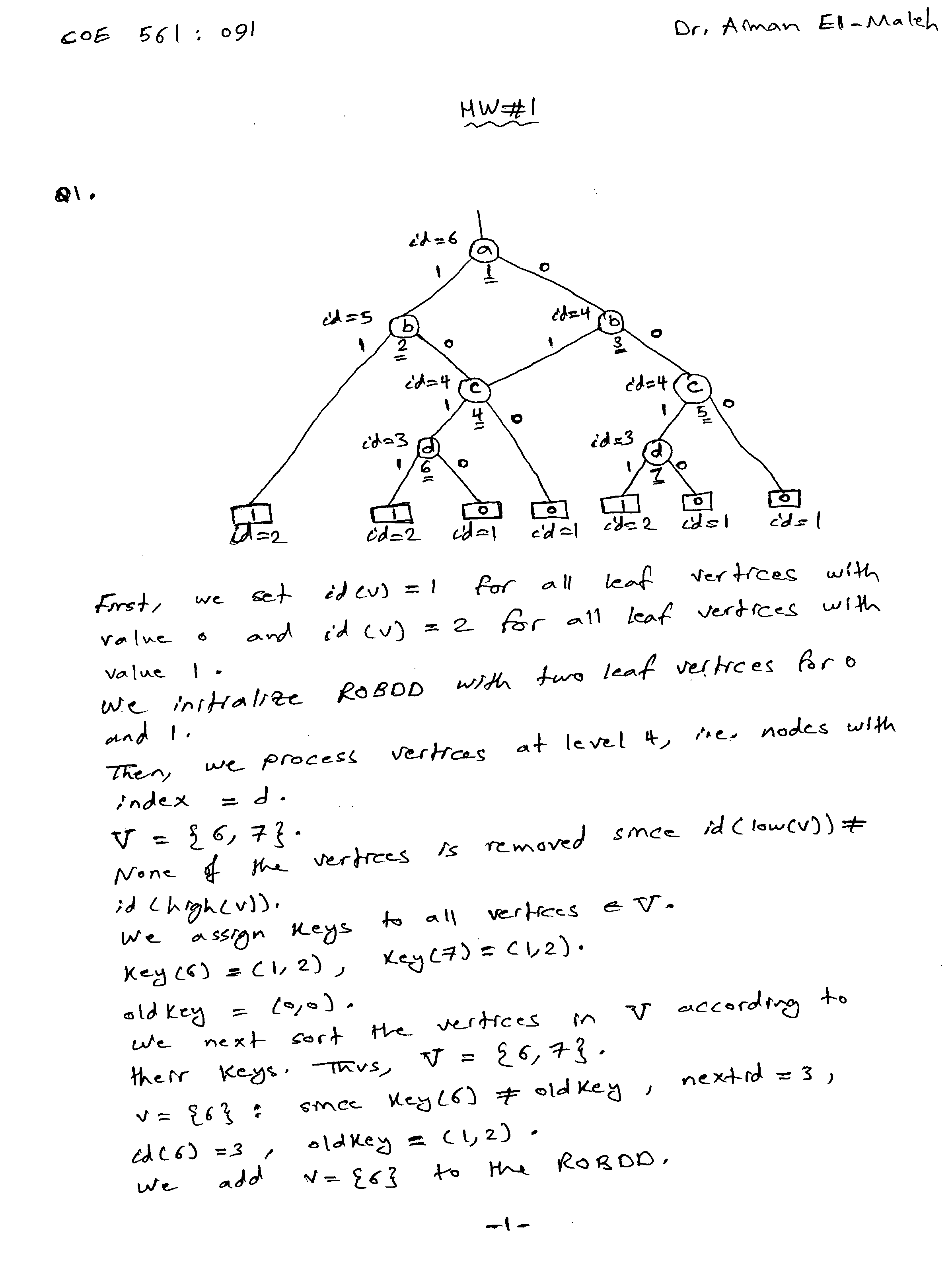
## Compute the function f⊕g based on orthonormal basis expansion.

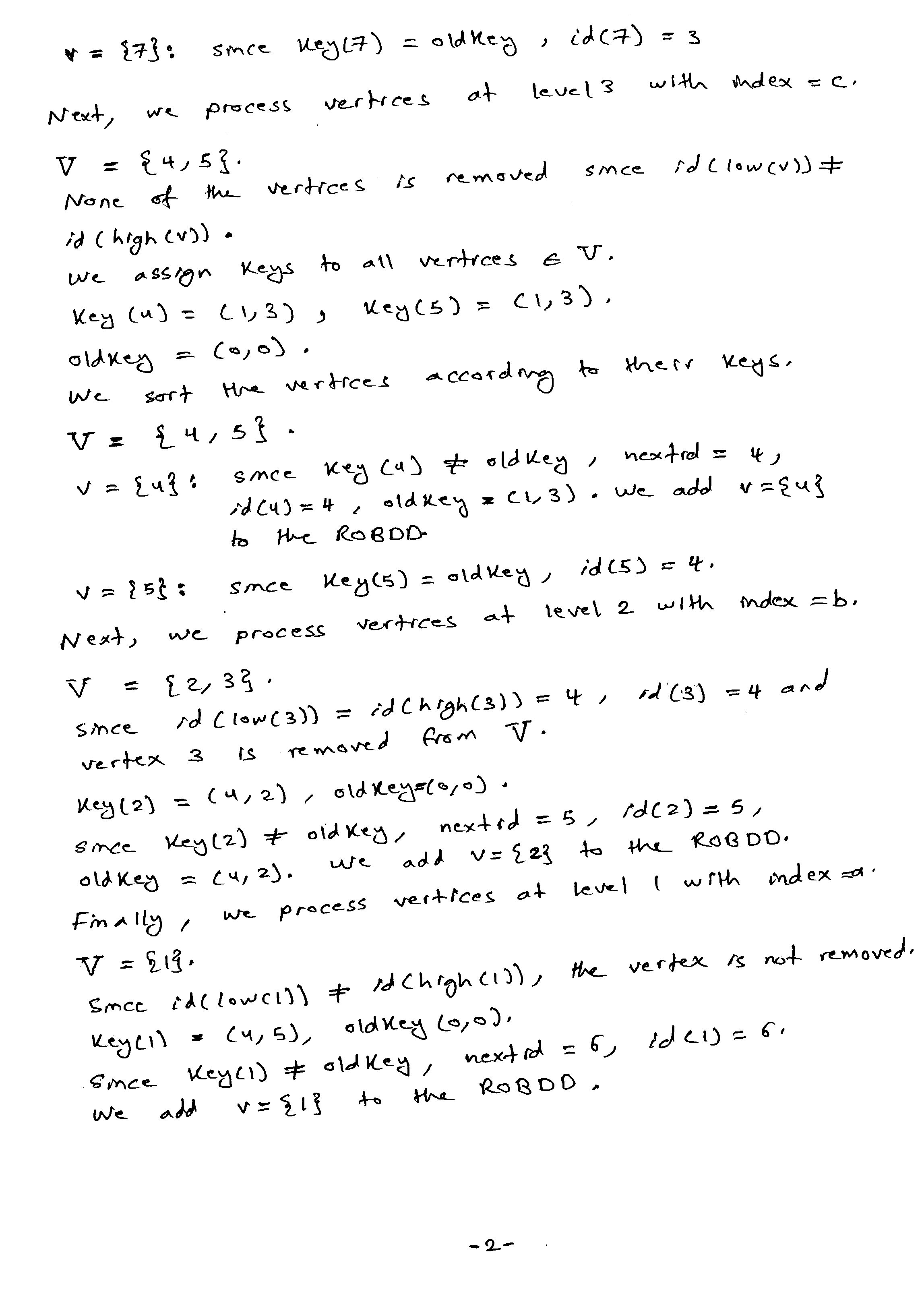
## Draw the **ITE DAG** for the function f.g. Show the details of the ITE algorithm step by step. Use the variable order {a, b, c, d}

# Consider the following given matrix representing a covering problem:

## 

## Find a **minimum cover** using **EXACT\_COVER** procedure. Show all the details of the algorithm. Assume the following order in branching selection when needed: C1, C2, C3, C4, C5, C6, C7, C8.





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