Universiti Malaysia PAHANG	**COURSE:** COMPUTER ARCHITECTURE & ORGANIZATION	**MARK :**
	TOPIC: Chapter 2,3 / **CODE:** BCN1043	
	ASSESSMENT: Assignment	**/100**

Instruction

1 Based on the groups you have chosen; You have to select the Group Leader. Only group leader should submit the assignment as representative in KALAM.

a Group leader should separate the task between all the team members.

b The items that you are required to give the solution is as below. Marks will be given on how well and detail the calculation and explanation given.

Question

Section 1

Complete the table with the workflow shown

(CO2: 25m, CO3 :25m)

DECIMAL	BINARY	OCTAL	HEXADECIMAL
20			
		7	
			FC
33			
	101110		
			1C2
65			
	100111		
		5705	
82			
	101001		
			ABCDEF
		120	
	1010		
			11
7.24579			
	10.1001		
		13.604	
			5.1D

Section 2

(CO2: 25m, CO3: 25m)

A nuclear power station has a critical system based on three inputs, temperature, Reactor pressure and cooling water to a logic circuit. It would be nice if we had some sort of safety (alarm) system installed to alert the technicians of a problem. An engineer decides that some sort of alarm device (flashing light, bell, etc.) could be installed at the output to alert maintenance personnel of any problem. A warning signal (F = 1) is produced when certain conditions in the nuclear power station occur based on these three inputs.

A warning signal (F = 1) will be produced when any of the following occurs:

either

(a) Temperature is down the limit, Reactor Pressure and Cooling water are good
or
(b) Temperature and Cooling water are good, Reactor Pressure is down
Or
(c) Temperature and Reactor Pressure are good, Cooling water is down
Or
(d) Temperature, Reactor Pressure and Cooling water are good

Build a truth table to show all the possible situations when the warning signal (F) could be received. Draw a simplified logic circuit.

Note: Simplify using Karnaugh's Map and show the simplification using Boolean Algebra as well.