**Assignment 3**

**Question 1:**

**(11001101)2  to decimal**

* This binary number contains 8 digits.
* So calculating :(2)7 + (2)6 + (0)5 + (0)4 + (2)3 + (2)2 + (0)1 + (2)0  = 205.
  + 128 + 64 + 0 + 0 + 8 + 4 + 0 + 1 = 205.
* Therefor the decimal conversion of binary no **(11001101)2 is (205)10**.

**Question 2:**

**(350)10 to binary**

* To calculate this problem we need to divide successively by 2.
* 350/2 = 175 and remainder is 0.
* 175/2 = 87 and remainder is 1.
* 87/2 = 43 and remainder is 1.
* 43/2 = 21 and remainder is 1.
* 21/2 = 10 and remainder is 1.
* 10/2 = 5 and remainder is 0.
* 5/2 = 2 and remainder is 1.
* 2/2 = 1 and remainder is 0.
* 1/2 = 0 and remainder is 1.
* Therefor binary conversion of decimal no **(350)10 is (101011110)2**.

**Question 3:**

**(3567)10 to hexadecimal**

* To calculate this problem we need to divide successively by 16.
* 3567 / 16 = 222 and remainder is 15.
* 222 / 16 = 13 and remainder is 14.
* 13 / 16 = 0 and remainder is 13.
* Now according to hexadecimal table 15 = F, 14 = E and 13 = D.
* Therefor hexadecimal conversion of decimal no **(3567)10 is (DEF)16.**

**Question 4:**

**(45AC)16 to octal**

* To calculate this problem we need to see hexadecimal to binary table (credit: \*).
* So we had to convert first to binary and then to octal.
* (4)16 = (0100)2
* (5)16 = (0101)2
* (A)16 = (1010)2
* (C)16 = (1100)2
* Now combining each term (45AC) 16 = (100010110101100) 2.
* Groping all digits in set of three.
* 100 010 110 101 100.
* Again using table of binary to octal (credit: \*).
* 100=4, 010=2, 110=6, 101=5, 100=4.
* Therefor hexadecimal conversion of decimal no **(45AC)16 is (42654)8.**

**Question 5:**

**No. of outputs**

* For first ‘for loop’, loop will run for 10 times.
* And in second ‘for loop’ (sub loop of first), will run for 10 times.
* And last loop which is sub loop of second loop, will execute for 10 times.
* So 10 \* 10 \* 10 = 1000.
* Therefor this code will output sum of I, j and k for 1000 times.

\* First link <https://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&ved=2ahUKEwjJirqhxLneAhUM6YMKHaeJBfEQjRx6BAgBEAU&url=http%3A%2F%2Fcompfunds.hnd-computing.info%2F%3Fpage_id%3D235&psig=AOvVaw1PvBRUiNU3vZJOgLriUPqH&ust=1541379503493225>

\* Second link

<https://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjfpNmby7neAhWjj4MKHUzjB38QjRx6BAgBEAU&url=http%3A%2F%2Fmira.startflyjobs.co%2Foctal-numbers-chart%2F&psig=AOvVaw34h8Ond_1BRAnzl59Q1ijg&ust=1541381368093289>