LAB ⇒ 4

1> NAME : KULBIR SINGH DHINDSA
STUDENT NUMBER : 99138917

2> DATE. OF. B.IRTH ⇒ 1996/06/11

3> Pretend your year of birth was a hex number. What would it be as a decimal? Show your work.

Ans ⇒ Date of Birth → 1996
Let 1996 as a Hex Number.
So,

$$1996 \longrightarrow (1\times16^3)+(9\times16^2)+(9\times16^1)+(6\times16^0)$$
$$\Rightarrow 4096+2304+144+6$$
$$\Rightarrow 6550$$

4> Convert your year of Birth to binary. Show your work.

Ans ⇒ Let 1996 as a Decimal to convert into Binary.

		Remainder
2	1996	→ 0
2	998	→ 0
2	449	→ 1
2	249	→ 1
2	124	→ 0
2	62	→ 0
2	31	→ 1
2	15	→ 1
2	7	→ 1
2	3	→ 1
	1	

So, the binary is :

⇒ 11111001100

5> Convert the Hex Number C0BF to binary. Show your work.

Ans⇒ C 0 B F

Here C⇒12, B⇒11, F⇒15

For C⇒12

2 | 12	→0
2 | 6	→0
2 | 3	→1
1	

For B⇒11

2 | 11	→1
2 | 5	→1
2 | 2	→0
1	

For F⇒15

2 | 15	→1
2 | 7	→1
2 | 3	→1
1	

So, C 0 B F

1100 0000 1011 1111

So, the Binary Number is ⇒ 1100000010111111

6> Now show the same number as Octal.

Ans⇒ C 0 B F

We know C⇒12, B⇒11, F⇒15

So, C 0 B F

1 1 0000000 1011 1111

Let makes the pair of 3 for octal and assume two zeros at starting:

001 100 000 010 111 111

Now match the pair with numbers of right hand side, we can get the octal number

⇒ 140277

We know:

111 → 7
110 → 6
101 → 5
100 → 4
011 → 3
010 → 2
001 → 1
000 → 0

7> Convert the binary number 1011010001 to decimal. Sho your work.

Ans ⇒ 1 0 1 1 0 1 0 0 0 1

Let assume as :

1 0 1 1 0 1 0 0 0 1

↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓

2^9 2^8 2^7 2^6 2^5 2^4 2^3 2^2 2^1 2^0

By solving this we get :

⇒ 512 + 0 + 128 + 64 + 0 + 16 + 0 + 0 + 0 + 1

⇒ 721

8> Convert your Student Number to Hex. Show your work

Ans ⇒ Student Number is ⇒ 99138917 7

			Remainder
16	991389177	→	9
16	61961823	→	15
16	3872613	→	5
16	242038	→	6
16	15127	→	7
16	945	→	1
16	59	→	11
	3		

So, we get ⇒ 3 11 7 6 5 15 9

But we know 11 ⇒ B and 15 ⇒ F

So, the Hex Number ⇒ 3B765F9