

Student Name: _____

ID#: _____

Q1) Fill in the table below with the equivalent numbers in the corresponding numbering systems.

Binary	Decimal	Hexadecimal
10001101	141	8D
100000100	260	104
100011110	286	11E

Q2) A number X is an 8 bits number and it consists of two smaller parts called Y and Z as follows:

Y is 5 bits	Z is 3 bits
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If $X = (CF)_{16}$; Then Y in **HEX** = 19

and Z in **HEX** = 7

Binary: 1100 1111

Binary divided to the required fields: 11001 111

Hex Equivalent: 19 7

Q3) NUM is a 16 bits number that consists of smaller 3 three parts as follows:

LE is 9 bits	M is 2 bits	Y is 5 bits
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If Y in HEX = F , M = 0 , and LE in Hex = 6F

Then the value of NUM in **HEX** = 378F

Writing the binary of each field:

00110111 00 0111

Merge the above into groups of 4 bits (to make it easy to find HEX)

0011 0111 1000 1111

0x378F

Q4) If we have 724 boxes and we need to assign a unique binary code to each one of them.

What is the minimum number of bits required? 9

How many unused codes? 212

Q5) a) In Octal system, what is the number that comes after 7777 ? 10000

b) In HEX system, what is the number that comes before 1000 ? FFF

c) In Binary system, what is the number that comes before 1000 ? 111

Q6) The decimal equivalent of $(212)_3$ is:

$$18+3+2=23$$