1. Ejercicios de conversión numérica. Deberá desarrollar las siguientes conversiones a decimal.

a) 101001101 Binario a Decimal

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Binario | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 |
| Posición | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| Decimal | 2^8 | 2^7 | 2^6 | 2^5 | 2^4 | 2^3 | 2^2 | 2^1 | 2^0 |
| Operaciones | 2^8\*1  256 | 2^7\*0  0 | 2^6\*1  64 | 2^5\*0  0 | 2^4\*0  0 | 2^3\*1  8 | 2^2\*1  4 | 2^1\*0  0 | 2^0\*1  1 |
| Suma | 256+64+8+4+1=333 | | | | | | | | |

**R/ Decimal: 333**

b) 764532 Octal a Decimal

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Octal | 7 | 6 | 4 | 5 | 3 | 2 | |
| Posición | 5 | 4 | 3 | 2 | 1 | 0 | |
| Decimal | 8^5 | 8^4 | 8^3 | 8^2 | 8^1 | 8^0 | |
| Operaciones | 8^5\*7  229376 | 8^4\*6  24576 | 8^3\*4  2048 | 8^2\*5  320 | 8^1\*3  24 | 8^0\*2  2 | |
| Suma | 229376+24576+2048+320+24+2=256346 | | | | | |

**R/ Decimal: 256346**

c) 1ABC903 Hexadecimal a Decimal

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Hexadecimal | 1 | A | B | C | 9 | 0 | 3 |
| Posición | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| Decimal | 16^6 | 16^5 | 16^4 | 16^3 | 16^2 | 16^1 | 16^0 |
| Operaciones | 16^6\*1  16777216 | 16^5\*10  10485760 | 16^4\*11  720896 | 16^3\*12  49152 | 16^2\*9  2304 | 16^1\*0  0 | 16^0\*3  3 |
| Suma | 16777216+10485760+720896+49152+2304+3=28035331 | | | | | | |

A=10

B=11

C=12

D=13

E=14

F=15

**R/ Decimal: 28035331**

2. Ejercicios de precedencia desarrolle los siguientes ejercicios; elabore el desarrollo de cada expresión para llegar a su respuesta,

a. 100 - (10 ^ 2 + 20) \* 100/4 - 10

100 – (10^2 + 20) \* 100 / 4 – 10

100 – (100 + 20) \* 100 / 4 – 10

100 – 120 \* 100 / 4 – 10

100 – 12000 / 4 – 10

100 – 3000 – 10

-2900 - 10

-2910

b. 21 / 3 \* 3 ^ 5 - 15 + 4 \* 2 \*(7 ^ 2)

21 / 3 \* 3^5 – 15 + 4 \* 2 \* (7^2)

21 / 3 \* 3^5 – 15 + 4 \* 2 \* 49

21 / 3 \* 243 – 15 + 4 \* 2 \* 49

7 \* 243 – 15 + 4 \* 2 \* 49

1701 – 15 + 4 \* 2 \* 49

1701 – 15 + 8 \* 49

1701 – 15 + 392

1686 + 392

2078

c. 500 - (2 ^ 5 - 20 + 15/4) / 2

500 - (2^5 – 20 + 15 / 4) / 2

500 - (32 – 20 + 15 / 4) / 2

500 - (32 – 20 + 3.75) / 2

500 - (12 + 3.75) / 2

500 - 15.75 / 2

500 - 7.88

492.12