Trabajo Práctico Nº 1

Carrera: **Técnico Superior en Análisis de Sistemas Informáticos**

Materia: **Cálculo Numérico**

Año de Cursada: **2018** Turno: **Noche**

Cátedra: **Lic. González Raúl**

**Ejercicios**

1. **001000000011(b)**

0.211+0.210+1.29+0.28+0.27+0.26+0.25+0.24+0.23+0.22+1.21+1.20

0+0+512+0+0+0+0+0+0+0+0+2+1

515

1. **11010111(b)**

1.27+1.26+0.25+1.24+0.23+1.22+1.21+1.20

128+64+0+16+0+4+2+1

215

1. **10100101(b)**

1.27+0.26+1.25+0.24+0.23+1.22+0.21+1.20

128+0+32+0+0+4+2+1

165

1. **10101011(b)**

1.27+0.26+1.25+0.24+1.23+0.22+1.21+1.20

128+0+32+16+8+0+2+1

187

1. **1111101(b)**

1.26+1.25+1.24+1.23+1.22+0.21+1.20

64+32+16+8+4+0+1

125

1. **100011000(b)**

1.28+0.27+0.26+0.25+1.24+1.23+0.22+0.21+0.20

256+0+0+0+16+8+0+0+0

280

1. **1010101010(b)**

1.29+0.28+1.27+0.26+1.25+0.24+1.23+0.22+1.21+0.20

512+0+128+0+32+0+8+0+2+0

682

1. **111110110(b)**

1.28+1.27+1.26+1.25+1.24+0.23+1.22+1.21+0.20

256+128+64+32+16+0+4+2+0

502

2) Realizar la conversión de numeración decimal a binario

1. **4215(d)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4215 | 2 |  |  |  |  |  |  |  |  |  |  |  |
| 1 | 2107 | 2 |  |  |  |  |  |  |  |  |  |  |
|  | 1 | 1053 | 2 |  |  |  |  |  |  |  |  |  |
|  |  | 1 | 526 | 2 |  |  |  |  |  |  |  |  |
|  |  |  | 0 | 263 | 2 |  |  |  |  |  |  |  |
|  |  |  |  | 1 | 131 | 2 |  |  |  |  |  |  |
|  |  |  |  |  | 1 | 65 | 2 |  |  |  |  |  |
|  |  |  |  |  |  | 1 | 32 | 2 |  |  |  |  |
|  |  |  |  |  |  |  | 0 | 16 | 2 |  |  |  |
|  |  |  |  |  |  |  |  | 0 | 8 | 2 |  |  |
|  |  |  |  |  |  |  |  |  | 0 | 4 | 2 |  |
|  |  |  |  |  |  |  |  |  |  | 0 | 2 | 2 |
|  |  |  |  |  |  |  |  |  |  |  | 0 | 1 |

1000001110111

1. **0525(d)**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 525 | 2 |  |  |  |  |  |  |  |  |
| 1 | 262 | 2 |  |  |  |  |  |  |  |
|  | 0 | 131 | 2 |  |  |  |  |  |  |
|  |  | 1 | 65 | 2 |  |  |  |  |  |
|  |  |  | 1 | 32 | 2 |  |  |  |  |
|  |  |  |  | 0 | 16 | 2 |  |  |  |
|  |  |  |  |  | 0 | 8 | 2 |  |  |
|  |  |  |  |  |  | 0 | 4 | 2 |  |
|  |  |  |  |  |  |  | 0 | 2 | 2 |
|  |  |  |  |  |  |  |  | 0 | 1 |

1000001101

1. **10631(d)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10631 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | 5315 | 2 |  |  |  |  |  |  |  |  |  |  |  |
|  | 1 | 2657 | 2 |  |  |  |  |  |  |  |  |  |  |
|  |  | 1 | 1328 | 2 |  |  |  |  |  |  |  |  |  |
|  |  |  | 0 | 664 | 2 |  |  |  |  |  |  |  |  |
|  |  |  |  | 0 | 332 | 2 |  |  |  |  |  |  |  |
|  |  |  |  |  | 0 | 166 | 2 |  |  |  |  |  |  |
|  |  |  |  |  |  | 0 | 83 | 2 |  |  |  |  |  |
|  |  |  |  |  |  |  | 1 | 41 | 2 |  |  |  |  |
|  |  |  |  |  |  |  |  | 1 | 20 | 2 |  |  |  |
|  |  |  |  |  |  |  |  |  | 0 | 10 | 2 |  |  |
|  |  |  |  |  |  |  |  |  |  | 0 | 5 | 2 |  |
|  |  |  |  |  |  |  |  |  |  |  | 1 | 2 | 2 |
|  |  |  |  |  |  |  |  |  |  |  |  | 0 | 1 |

10100110000111

1. **8762(d)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8762 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |
| 0 | 4381 | 2 |  |  |  |  |  |  |  |  |  |  |  |
|  | 1 | 2190 | 2 |  |  |  |  |  |  |  |  |  |  |
|  |  | 0 | 1095 | 2 |  |  |  |  |  |  |  |  |  |
|  |  |  | 1 | 547 | 2 |  |  |  |  |  |  |  |  |
|  |  |  |  | 1 | 273 | 2 |  |  |  |  |  |  |  |
|  |  |  |  |  | 1 | 136 | 2 |  |  |  |  |  |  |
|  |  |  |  |  |  | 0 | 68 | 2 |  |  |  |  |  |
|  |  |  |  |  |  |  | 0 | 34 | 2 |  |  |  |  |
|  |  |  |  |  |  |  |  | 0 | 17 | 2 |  |  |  |
|  |  |  |  |  |  |  |  |  | 1 | 8 | 2 |  |  |
|  |  |  |  |  |  |  |  |  |  | 0 | 4 | 2 |  |
|  |  |  |  |  |  |  |  |  |  |  | 0 | 2 | 2 |
|  |  |  |  |  |  |  |  |  |  |  |  | 0 | 1 |

10001000111010

3)Teniendo los siguientes números hexadecimales genere las transformaciones solicitadas.

**a) FFF(H)---(D)---(B) ,**

15.162 + 15.161 + 15.160

15.256 + 15.16 + 15.1

4095-(B)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4095 | 2 |  |  |  |  |  |  |  |  |  |  |  |
| 1 | 2047 | 2 |  |  |  |  |  |  |  |  |  |  |
|  | 1 | 1023 | 2 |  |  |  |  |  |  |  |  |  |
|  |  | 1 | 511 | 2 |  |  |  |  |  |  |  |  |
|  |  |  | 1 | 255 | 2 |  |  |  |  |  |  |  |
|  |  |  |  | 1 | 127 | 2 |  |  |  |  |  |  |
|  |  |  |  |  | 1 | 63 | 2 |  |  |  |  |  |
|  |  |  |  |  |  | 1 | 31 | 2 |  |  |  |  |
|  |  |  |  |  |  |  | 1 | 15 | 2 |  |  |  |
|  |  |  |  |  |  |  |  | 1 | 7 | 2 |  |  |
|  |  |  |  |  |  |  |  |  | 1 | 3 | 2 |  |
|  |  |  |  |  |  |  |  |  |  | 1 | 1 |
|  |  |  |  |  |  |  |  |  |  |  |  |

111111111111

**B) 2ABF(H)---(B)---(o),**

10 1010 1011 1111 (d) → 10 101 010 111 111(o)

| | | | | | | |

1. A B F 2 10 11 7

**c) 3B99(H)---(B)---(O),**

11 1011 1001 1001 (b) → 11 101 110 011 001 (o)

| | | | | | | |

1. B 9 9 3 13 11 11
2. **1FF(H)---(B)---(D),**

1 1111 1111 (b) → 1.28+1.27+1.26+1.25+1.24+1.23+1.22+1.21+1.20 (d)

| | | 256 + 128 + 64 + 32 + 16 + 8 + 4 + 2 + 1

1 F F 511

1. **ABCDE(H)---(D)---(B),**

10.164 + 11.163 + 12.162 + 13.161 + 14.160

10.65536 + 11.4096 + 12.256 + 13.16 + 14.1

703710 (d)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 703710 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0 | 351855 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1 | 175927 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1 | 87963 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 1 | 43981 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | 1 | 21990 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | 0 | 10995 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | 1 | 5497 | 2 |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 1 | 2748 | 2 |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 0 | 1374 | 2 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | 0 | 687 | 2 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | 1 | 343 | 2 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | 1 | 171 | 2 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | 1 | 85 | 2 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 42 | 2 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 21 | 2 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 10 | 2 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 5 | 2 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 2 | 2 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 1 |

10101011110011011110 (b)

1. **AFF9(H)---(B)---(D),**

1010111111111001 (b)

1.215+0.214+1.213+0.212+1.211+1.210+1.29+1.28+1.27+1.26+1.25+1.24+1.23+0.22+0.21+0.20

32768 + 0 + 8192 + 0 +2048 + 1024 + 512 + 256 + 128 + 64 + 32 + 16 + 8 + 0 + 0 + 1

45049 (d)

1. **C0D0(H)---(B)---(O),**

1100 0000 1101 0000

| | | |

C 0 D 0 (b)

140320 (o)

1. **A0F(H)---(D)---(B)**

10.162 + 0.161 + 15.160

10.256 + 0 + 15

2575 (d)

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2575 | 2 |  |  |  |  |  |  |  |  |  |  |
| 1 | 1287 | 2 |  |  |  |  |  |  |  |  |  |
|  | 1 | 643 | 2 |  |  |  |  |  |  |  |  |
|  |  | 1 | 321 | 2 |  |  |  |  |  |  |  |
|  |  |  | 1 | 160 | 2 |  |  |  |  |  |  |
|  |  |  |  | 0 | 80 | 2 |  |  |  |  |  |
|  |  |  |  |  | 0 | 40 | 2 |  |  |  |  |
|  |  |  |  |  |  | 0 | 20 | 2 |  |  |  |
|  |  |  |  |  |  |  | 0 | 10 | 2 |  |  |
|  |  |  |  |  |  |  |  | 0 | 5 | 2 |  |
|  |  |  |  |  |  |  |  |  | 1 | 2 | 2 |
|  |  |  |  |  |  |  |  |  |  | 0 | 1 |

101000001111 (b)