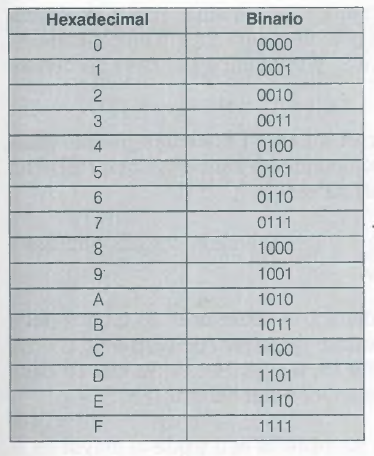
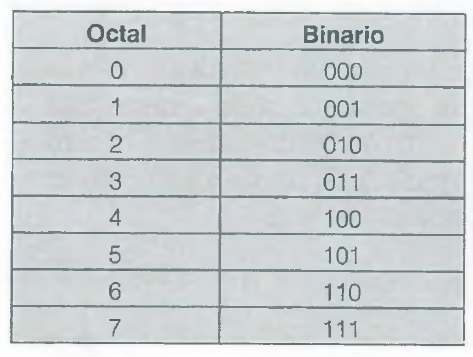
| **Nombre** | EDWIN ALBEIRO RAMOS VILLAMIL |
| --- | --- |
| **Ficha\_Grupo** | ADSO Y ADSI |
| **Jornada** | TODAS |
| **Fecha** | 05 de Marzo de 2023 |

**Descripción:**

1. **Lógica Computacional**

Solucione los siguientes ejercicios:

* 1. Realizar las siguientes conversiones usando tablas de equivalencias binario-octal, binario-hexadecimal.



1. 1001000111010100100010.0101(2) a octal.

| 001 | 001 | 000 | 111 | 010 | 100 | 100 | 010 | . | 010 | 100 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | **1** | **0** | **7** | **2** | **4** | **4** | **2** | **.** | **2** | **4** |

1. 4EC7.B5(16) a binario.

| 4 | E | C | 7 | . | B | 5 |
| --- | --- | --- | --- | --- | --- | --- |
| **0100** | **1110** | **1100** | **0111** | **.** | **1011** | **0101** |

1. 475320.47(8) a hexadecimal.

| 4 | 7 | 5 | 3 | 2 | 0 | . | 4 | 7 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 100 | 111 | 101 | 011 | 010 | 000 | . | 100 | 111 |
| 0010 0111 1010 1101 0000 . 1001 1100 | | | | | | | | |

| 0010 | 0111 | 1010 | 1101 | 0000 | . | 1001 | 1100 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2** | **7** | **A** | **D** | **0** | **.** | **9** | **C** |

1. 32FE685.9C(16) a octal.

| 3 | 2 | F | E | 6 | 8 | 5 | . | 9 | C |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0011 | 0010 | 1111 | 1110 | 0110 | 1000 | 0101 | . | 1001 | 1100 |
| 000 011 001 011 111 110 011 010 000 101 . 100 111 000 | | | | | | | | | |

| 000 | 011 | 001 | 011 | 111 | 110 | 011 | 010 | 000 | 101 | . | 100 | 111 | 000 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | **3** | **1** | **3** | **7** | **6** | **3** | **2** | **0** | **5** | **.** | **4** | **7** | **0** |

* 1. Convertir usando el método general (del sistema X a decimal y del sistema decimal al sistema W).

1. 730568.23(9) a base 14.

Se convierte a decimal

| 5 | 4 | 3 | 2 | 1 | 0 | . | -1 | -2 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 7 | 3 | 0 | 5 | 6 | 8 | . | 2 | 3 |
| 7x95 | 3x94 | 0x93 | 5x92 | 6x91 | 8x90 | . | 2x9-1 | 3x9-2 |
| 7 x 59049 | 3 x 6561 | 0 | 5 x 81 | 6 x 9 | 8 x 1 | . | 2/9 | 3/81 |
| 413343 | 19683 | 0 | 405 | 54 | 8 | . | 0.2222 | 0.0371 |
| = 413343 + 19683 + 405 + 54 + 8 + 0.2222 + 0.0371  = 433493.2593(10) | | | | | | | | |

Se hace la conversión a base 14

| PARTE ENTERA | PARTE FRACCIONARIA |
| --- | --- |
| 433493 / 14 = 30963 . -> 7857 x 14 = 11 -> B  30963 / 14 = 2211. -> 6428 x 14 = 9  2211 / 14 = 157. -> 9285 x 14 = 13 -> D  157 / 14 = 11 .-> 2142 x 14 = 3  11 / 14 = = B | 0.2593 x 14 = 3  0.6302 x 14 = 8  0.8228 x 14 = B  0.5192 x 14 = 7 |
| **B3D9B.38B7** | |

1. 4A7E8.52(18) a base 15.

Se convierte a decimal

| 4 | 3 | 2 | 1 | 0 | . | -1 | -2 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 4 | A | 7 | E | 8 | . | 5 | 2 |
| 4x184 | 10x183 | 7x182 | 14x181 | 8x180 | . | 5x18-1 | 2x18-2 |
| 4 x 104976 | 10 x 5832 | 7 x 324 | 14 x 18 | 8 x 1 | . | 5/18 | 2/324 |
| 419904 | 58320 | 2268 | 252 | 8 |  | 0.2778 | 0.0062 |
| = 419904 + 58320 + 2268 + 252 + 8 + 0.2778 + 0.0062  = 480752.282(10) | | | | | | | |

Se hace la conversión a base 15

| PARTE ENTERA | PARTE FRACCIONARIA |
| --- | --- |
| 480752 / 15 = 32050 . -> 0.1333 x 15 = 2  32050 / 15 = 2136 . -> 0.6666 x 15 = 10 -> A  2136 / 15 = 142 . -> 0.4 x 15 = 6  142 / 15 = 9 . -> 0.4666 x 15 = 7  9 / 15 = = 9 | 0.282 x 15 = 4  0.23 x 15 = 3  0.45 x 15 = 6  0.75 x 15 = 11 -> B |
| **976A2.436B** | |

* 1. Representar en forma de teorema cada uno de los siguientes enunciados, usando para ello notación lógica:

1. Haré la tarea de matemáticas para computación, si y sólo si tengo tiempo. Iré a la disco, si y sólo si tengo tiempo y tengo dinero. Si no tengo dinero, entonces haré la tarea de matemáticas para computación y veré un buen programa de televisión. Por lo tanto, si veo un buen programa de televisión y tengo tiempo, entonces haré la tarea de matemáticas para computación.

p = haré la tarea de matemáticas para la computación

q = tengo tiempo

r = iré a la disco

s = tengo dinero

t = veré un buen programa de televisión

**(p q) [r (q s)] [s (p t)] [(t q) p)]**

1. Si tengo conocimientos de computación y domino el inglés, entonces no tendré problemas para encontrar trabajo. Si tengo problemas para encontrar trabajo, entonces tengo más de 40 años o no me preparé lo suficiente. Por lo tanto, si me preparo lo suficiente y no tengo más de 40 años y domino el inglés, entonces no tendré problemas para encontrar trabajo.

p = tengo conocimientos en computación

q = domino el inglés

r = tendré problemas para encontrar trabajo

s = tengo más de 40 años

t = me preparé los suficiente

**[(p q) r] [r (s q)] [(t s p) r]**

* 1. Elaborar la tabla de verdad para cada una de las siguientes proposiciones compuestas:

1. [p (q r)] q

| p | q | r | q | (q r) | [p (q r)] | **[p (q r)] q** |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 1 | 0 | 1 | 1 | **1** |
| 1 | 1 | 0 | 0 | 1 | 1 | **1** |
| 1 | 0 | 1 | 1 | 1 | 1 | **0** |
| 1 | 0 | 0 | 1 | 0 | 0 | **0** |
| 0 | 1 | 1 | 0 | 1 | 0 | **0** |
| 0 | 1 | 0 | 0 | 1 | 0 | **0** |
| 0 | 0 | 1 | 1 | 1 | 0 | **0** |
| 0 | 0 | 0 | 1 | 0 | 0 | **0** |

1. [(p q) (p q)]

| p | q | (p q) | (p q) | [(p q) (p q)] | **[(p q) (p q)]** |
| --- | --- | --- | --- | --- | --- |
| 1 | 1 | 1 | 1 | 1 | **0** |
| 1 | 0 | 0 | 1 | 1 | **0** |
| 0 | 1 | 0 | 1 | 1 | **0** |
| 0 | 0 | 0 | 0 | 1 | **0** |

1. [q r] [r p]

| p | q | r | [q r] | [r p] | **[q r] [r p]** |
| --- | --- | --- | --- | --- | --- |
| 1 | 1 | 1 | 1 | 1 | **1** |
| 1 | 1 | 0 | 0 | 0 | **0** |
| 1 | 0 | 1 | 1 | 1 | **1** |
| 1 | 0 | 0 | 1 | 0 | **1** |
| 0 | 1 | 1 | 1 | 0 | **1** |
| 0 | 1 | 0 | 0 | 0 | **0** |
| 0 | 0 | 1 | 1 | 0 | **1** |
| 0 | 0 | 0 | 1 | 0 | **1** |

1. [p q] [p (q r)]

| p | q | r | [p q] | (q r) | [p (q r)] | **[p q] [p (q r)]** |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 1 | 1 | 1 | 1 | **1** |
| 1 | 1 | 0 | 1 | 1 | 1 | **1** |
| 1 | 0 | 1 | 0 | 1 | 1 | **1** |
| 1 | 0 | 0 | 0 | 0 | 0 | **1** |
| 0 | 1 | 1 | 1 | 1 | 1 | **1** |
| 0 | 1 | 0 | 1 | 1 | 1 | **1** |
| 0 | 0 | 1 | 1 | 1 | 1 | **1** |
| 0 | 0 | 0 | 1 | 0 | 1 | **1** |

* 1. Siendo: p = 1, q = 2, r = 3, s = 4, t = 5; solucione las siguientes expresiones:

1. s / q + [tr (-r \* p) + s] > t / -q + s [t / q + r - s > s / q ] s + p \* t > (t - r)s

| = s / q + [tr (-r \* p) + s] > t / -q + s [t / q + r - s > s / q ] s + p \* t > (t - r)s  = 4 / 2 + [53 (-3 \* 1) + 4] > 5 / -2 + 4 [5 / 2 + 3 - 4 > 4 / 2] 4 + 1 \* 5 > (5 - 3)4  = 2 + [125 (-3) + 4] > -2.5 + 4 [2.5 + 3 - 4 > 2] 4 + 5 > (2)4  = 2 + [-375 + 4] > 1.5 [1.5 > 2] 9 > 16  = 2 + [-371] > 1.5 [0] 0  = 2 - 371 > 1.5 [0] 0  = 369 > 1.5 1 0  = 1 1 0  = 1 0  **= 0** |
| --- |

1. [p \* q \* r > s \* p qp > rq] (s \* p) < tr - r t / p > rs - q = r

| = [1 \* 2 \* 3 > 4 \* 1 21 > 32] (4 \* 1) < 53 - 3 5 / 1 > 34 - 2 = 3  = [6 > 4 2 > 9] 4 < 125 - 3 5 > 32 = 3  = [1 0] 4 < 122 5 > 9 = 3  = [1] 1 0 1  = 0 1 1  = 0 1  **= 1** |
| --- |

|  | **Nombre** | **Cargo** | **Dependencia** | **Fecha** |
| --- | --- | --- | --- | --- |
| **Autor (es)** | Edwin Albeiro Ramos Villamil | Instructor | CEET | 24/02/2023 |