| **MÒDUL:** M2 - SISTEMES OPERATIUS MONOLLOC |
| --- |
| **UF1:** Introduction operation systems |

| **COGNOMS, NOM: Zulema Romero** | |  | **NOTA** |
| --- | --- | --- | --- |
| **DATA: 19/10/2023** | **GRUP: SMX1-B** |

**1. Binary and decimal systems**

1. **Convert the following decimal numbers to binary using successive divisions:**

**12** 1100 **8** 1000 **18** 10010 **21** 10101

**10** 1010 **15** 1111 **25** 11001 **11** 1011

1. **Convert the following binary numbers to decimal:**

**10101** 21 **1000101** 69 **11010** 26 **10001101** 141

**101** 5 **10101010** 170 **1110101** 117 **1001** 9

**2.Complete the following table:**

| Decimal | Binari |
| --- | --- |
| **11** | 1010 |
| 169 | **10101001** |
| **23** | 10111 |
| 43 | **101011** |
| **94** | 0111110 |

**Sistemes binari i octal**

**a) Transforma els següents nombre octals a binari:**

**6 110 13 001011 24 010100 7 111**

**16 001110 21 010001 33 011011 65 110101**

**b) Transforma de binari a octal utilitzant agrupacions de bits de tres en tres:**

**11101 35 1110011 163 100001 41 10011 23**

**110 6 10111001 271 1101101 155 1011 23**

**3. Sistemes decimal i octal**

**a) Transforma els següents nombres octals a decimal utilitzant el teorema fonamental de la numeració (potències de 8):**

**27 23 15 13 65 53 41 33**

**b) Transforma els següents nombres decimals a octal utilitzant divisions successives per 8:**

**41 51 33 41 20 24 13 15**

**4. Completa el quadre següent:**

| **Decimal** | **Binari** | **Octal** |
| --- | --- | --- |
| **11** | **1010** | **13** |
|  |  | **90** |
| **169** | **10101001** | **251** |
| **23** | **10111** | **27** |
| **43** | **101011** | **53** |
| **64** | **1000000** | **71** |
| **94** | **0111110** | **136** |

**5. En l’exercici anterior, hi ha un número de l’enunciat que no és correcte, identifica’l i explica perquè.**

**PERQUE EN EL SISTEMA OCTAL NO EXISTEIX EL NUMERO 9**

**6. Donada la següent taula:**

| **Caràcters no imprimibles** | | | |  | **Caràcters imprimibles** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Nom** | **Dec** | **Hex** | **Car.** | **Dec** | **Hex** | **Car.** |  | **Dec** | **Hex** | **Car.** |  | **Dec** | **Hex** | **Car.** |
| Nul | 0 | 00 | NUL | 32 | 20 | Espai | 64 | 40 | @ | 96 | 60 | ` |
| Inici de capçalera | 1 | 01 | SOH | 33 | 21 | ! | 65 | 41 | A | 97 | 61 | a |
| Inici de text | 2 | 02 | STX | 34 | 22 | " | 66 | 42 | B | 98 | 62 | b |
| Final de text | 3 | 03 | ETX | 35 | 23 | # | 67 | 43 | C | 99 | 63 | c |
| Final de transmissió | 4 | 04 | EOT | 36 | 24 | $ | 68 | 44 | D | 100 | 64 | d |
| enquiry | 5 | 05 | ENQ | 37 | 25 | % | 69 | 45 | E | 101 | 65 | e |
| acknowledge | 6 | 06 | ACK | 38 | 26 | & | 70 | 46 | F | 102 | 66 | f |
| Campaneta (beep) | 7 | 07 | BEL | 39 | 27 | ' | 71 | 47 | G | 103 | 67 | g |
| backspace | 8 | 08 | BS | 40 | 28 | ( | 72 | 48 | H | 104 | 68 | h |
| Tabulador horitzontal | 9 | 09 | HT | 41 | 29 | ) | 73 | 49 | I | 105 | 69 | i |
| Salt de línia | 10 | 0A | LF | 42 | 2A | \* | 74 | 4A | J | 106 | 6A | j |
| Tabulador vertical | 11 | 0B | VT | 43 | 2B | + | 75 | 4B | K | 107 | 6B | k |
| Salt de pàgina | 12 | 0C | FF | 44 | 2C | , | 76 | 4C | L | 108 | 6C | l |
| Retorn de carro | 13 | 0D | CR | 45 | 2D | - | 77 | 4D | M | 109 | 6D | m |
| Shift fora | 14 | 0E | SO | 46 | 2E | . | 78 | 4E | N | 110 | 6E | n |
| Shift dins | 15 | 0F | SI | 47 | 2F | / | 79 | 4F | O | 111 | 6F | o |
| Escape línia de dades | 16 | 10 | DLE | 48 | 30 | 0 | 80 | 50 | P | 112 | 70 | p |
| Control dispositiu 1 | 17 | 11 | DC1 | 49 | 31 | 1 | 81 | 51 | Q | 113 | 71 | q |
| Control dispositiu 2 | 18 | 12 | DC2 | 50 | 32 | 2 | 82 | 52 | R | 114 | 72 | r |
| Control dispositiu 3 | 19 | 13 | DC3 | 51 | 33 | 3 | 83 | 53 | S | 115 | 73 | s |
| Control dispositiu 4 | 20 | 14 | DC4 | 52 | 34 | 4 | 84 | 54 | T | 116 | 74 | t |
| neg acknowledge | 21 | 15 | NAK | 53 | 35 | 5 | 85 | 55 | U | 117 | 75 | u |
| Sincronisme | 22 | 16 | SYN | 54 | 36 | 6 | 86 | 56 | V | 118 | 76 | v |
| Final bloc transmès | 23 | 17 | ETB | 55 | 37 | 7 | 87 | 57 | W | 119 | 77 | w |
| Cancel·lar | 24 | 18 | CAN | 56 | 38 | 8 | 88 | 58 | X | 120 | 78 | x |
| Final mig | 25 | 19 | EM | 57 | 39 | 9 | 89 | 59 | Y | 121 | 79 | y |
| Substitut | 26 | 1A | SUB | 58 | 3A | : | 90 | 5A | Z | 122 | 7A | z |
| Escape | 27 | 1B | ESC | 59 | 3B | ; | 91 | 5B | [ | 123 | 7B | { |
| Separador arxius | 28 | 1C | FS | 60 | 3C | < | 92 | 5C | \ | 124 | 7C | | |
| Separador grups | 29 | 1D | GS | 61 | 3D | = | 93 | 5D | ] | 125 | 7D | } |
| Separador registres | 30 | 1E | RS | 62 | 3E | > | 94 | 5E | ^ | 126 | 7E | ~ |
| Separador unitats | 31 | 1F | US | 63 | 3F | ? | 95 | 5F | \_ | 127 | 7F | DEL |

1. Convert the following message to hexadecimal:

***“La paciencia te mes poder que la força. Plutarc”***

***224c6170616369656e63696174656d6573706f6465727175656c61666f72 135 612e506c757461726322***

1. Convert the following message from hexadecimal to text:

**4d 27 61 67 72 61 64 65 6e 20 6c 65 73 20 65 6e 64 65 76 69 6e 61 6c 6c 65 73 2e**

**M’agraden les endivinalles.**

**There are three misspellings in the message from the previous exercise because the 7-bit ASCII code is missing the accents.**

**Els accents.**