* **Question 1**

25 out of 25 points

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|  | The following bytes (shown in hex) represent a person’s name as it would be stored in a computer’s memory. Each byte is a padded ASCII code. Determine the name of each person.  47 2E 20 4D 6F 6F 72 6516 = **[A]**  **ANS:**  The name represented by the given hex string 472E204D6F6F726516 is G. Moore. 🌟 |  |  |  |
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* **Question 2**

0 out of 15 points

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|  | Encode these decimal numbers in BCD  a. 47 = **[A]**BCD  b. 187 = **[B]**BCD  c. 89,627 = **[C]**BCD  **ANS** |  |  |  |
| |  | | --- | | a. 47:  From the truth table for BCD, we have:  4 -> 0100  7 -> 0111  Therefore, the BCD representation of 47 is 0100 0111 1.  b. 187:  From the truth table for BCD:  1 -> 0001  8 -> 1000  7 -> 0111  Thus, the BCD representation of 187 is 0001 1000 0111 1.  c. 89,627:  Breaking down each digit:  8 -> 1000  9 -> 1001  6 -> 0110  2 -> 0010  7 -> 0111  The BCD equivalent of 89,627 is 1000 1001 0110 0010 0111 1. | |  |  |  |

* **Question 3**

10 out of 10 points

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|  | How many bits are required to represent the decimal numbers in the range from 0 to 999 using  a. Straight binary code: **[A]**  b. BCD code: **[B]**  **ANS:**  a. Straight Binary Code:  **Each decimal digit can be represented by 4 bits** (since there are 10 possible values for each digit: 0 to 9). We have **3 decimal digits** (0 to 999).  Therefore, the total number of bits required for straight binary code is: Total bits=Number of digits×Bits per digit=3×4=12 bits  b. BCD (Binary Coded Decimal) Code: Each decimal digit can be represented by 4 bits in BCD. We have 3 decimal digits (0 to 999).  Therefore, the total number of bits required for BCD code is:Total bits=Number of digits×Bits per digit=3×4×10=120 bits  Straight binary code requires 12 bits to represent decimal numbers in the range from 0 to 999.  BCD code requires 120 bits to represent decimal numbers in the same range. |  |  |  |
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* **Question 4**

15 out of 15 points

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|  | How many bits are contained in ten bytes? **[A]** bits  What is the largest hex number that can be represented in eight bytes? **[B]**16  What is the largest BCD-encoded decimal value that can be represented in three bytes? **[C]**  **ANS:**  Bits in Bytes: Ten bytes contain 80 bits because one byte equals 8 bits.  Largest Hex Number: The largest hex number that can be represented in eight bytes is ( FFFF FFFF FFFF FFFF )\_{16}.  Largest BCD Value: The largest BCD-encoded decimal value that can be represented in three bytes is 999. |  |  |  |
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* **Question 5**

0 out of 20 points

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|  | Represent the statement "**X=Y+Z;**" in ASCII code: **[A]**16  ANS:  ASCII Code: The ASCII representation of “X=Y+Z;” is 58 3D 59 2B 5A 3B. |  |  |  |
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* **Question 6**

15 out of 15 points

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|  | The following numbers are in BCD. Convert them to decimal  a. 1001 0111 0101 0010BCD = **[A]**10  b. 0110 1001 0101BCD = **[B]**10  c. 0100 1001 0010BCD = **[C]**10  **ANS:**  a. ( 1001 0111 0101 0010 ){BCD} = 9752{10}  b. ( 0110 1001 0101 ){BCD} = 695{10}  c. ( 0100 1001 0010 ){BCD} = 492{10} | |  |  |  |
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