# MATHEMATICS AND COMPUTER HARDWARE – NUMBER SYSTEMS, NUMBER CONVERSION, BINARY ARITHMETIC - QUESTIONS AND ANSWERS

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| **Question** | The decimal number +125 can be represented in signed binary as: |
| **Answer** | 011111011000001011111001None of the above |

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| **Question** | The decimal number -36 is expressed in the 2’s complement form as: |
| **Answer** | 110110110101101111011100None of the above |

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| **Question** | The sum of 1010+10111 equals |
| **Answer** | 101101111010101111110001 |

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| **Question** | The difference of 101-011 equals |
| **Answer** | 010100101011 |

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| **Question** | The binary number 11012 is equal to the decimal number |
| **Answer** | 4913113 |

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| **Question** | When performing binary addition using the 2’s complement method, an overflow is indicated by a (n) \_\_\_\_\_\_\_\_\_ |
| **Answer** | Negative signIncorrect sign bitIncorrect polarityIncorrect sum |

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| **Question** | What is the BCD form of 438? |
| **Answer** | 10100001110000100001110000001101101100100000110100 |

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| **Question** | The highest decimal value that can be represented by a 4-bit binary number is \_\_\_\_\_\_\_\_\_\_\_\_ |
| **Answer** | 328715 |

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| **Question** | Which of the following is the hexadecimal representation of binary number 1101001101? |
| **Answer** | D3134DC4DD34 |

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| **Question** | Which of the following is the binary representation of decimal number 151? |
| **Answer** | 1011000101511101110010111 |

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| **Question** | What is the hex equivalent of the binary number 101010112 |
| **Answer** | 8516E816AB169B16 |

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| **Question** | Which of the following binary numbers is equal to 010100102 + 001100012? |
| **Answer** | 011100112100000112000000112100000012 |

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| **Question** | Which of the following binary numbers is equal to 11112 + 11112? |
| **Answer** | 111102None of the answers is correct10000211112 |

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| **Question** | Which of the following is the decimal representation of hexadecimal number 12316? |
| **Answer** | 801102911012310413110 |

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| **Question** | Which of the following is the number that is represented by 11101001 in 8-bit 2’s complement form?  |
| **Answer** | 233-99-23 |

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| **Question** | Which of the following is the decimal representation of binary number 1000101? |
| **Answer** | 691000101.08137 |

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| **Question** | Which of the following is the binary representation of decimal number 101110? |
| **Answer** | 101121011101111110011111110011 |

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| **Question** | What is the binary equivalent of 4F16? |
| **Answer** | 1001111210011002100011112None |

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| **Question** | The decimal number -36 is expressed in the 2’s complement form as |
| **Answer** | 110111001101101101011011None of the above |

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| **Question** | In the 2’s complement form, the binary number 10010011 is equal to the decimal number |
| **Answer** | -109+109-19+19 |

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| **Question** | Which of the following is the hexadecimal representation of decimal number 7522? |
| **Answer** | 26131113621D6226D1 |

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| **Question** | What is the value of the sum 225 + 345? |
| **Answer** | 445121511151005 |

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| **Question** | What is the binary equivalent of 178? |
| **Answer** | 101111211112100012None of the above |

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| **Question** | In binary multiplication, 1 x 1 = \_\_\_\_\_\_\_\_\_\_ |
| **Answer** | 0 with a carry of 11 with a carry of 110 |

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| **Question** | In using the 2’s-complement system of subtraction, a negative number in the subtrahend would ultimately be changed to: |
| **Answer** | A negative number in true binary formA positive number in true binary form |

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| **Question** | The 1’s complement of 10111001 is |
| **Answer** | 01000110010001111100011010111001 |

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| **Question** | The 2’s complement of 11001000 is |
| **Answer** | -109+109-19+19 |

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| **Question** | Select the correct statement from the following: |
| **Answer** | The 2’s complement of the binary number 0001 is 1111The 1’s complement of the binary number 0101 is 1011BCD stands for Binary Code for DigitalLSB stands for Lowest Single Bit |

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| **Question** | Choose a correct statement from the following |
| **Answer** | The decimal number system is a weighted system with ten digitsLSB stand for lowest single bitIn binary, 1 + 1 = 2The right-most bit in a signed binary number is the sign bit |

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| **Question** | In the 2’s complement form, the binary number 01110101 is equal to: |
| **Answer** | +117-117+10-10 |

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| **Question** | In the 2’s complement form, the binary number 10010011 is equal to the decimal number |
| **Answer** | -109+109-19+19 |