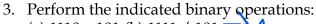


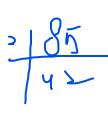
Assignment - 1

11610101

- 1. Perform the following binary additions:
 - (a) 1001 + 1110 (b) 10111 + 11101
- 2. Perform the following binary subtractions:
 - (a) 1101 0101 (b) 1011 0101



- (a) 1110 x 101 (b) 1111 / 101
- 4. Express each decimal number in binary as an 8-bit sign-magnitude number:
 - (a) -85 (b) +100 (c) -113
- 5. Express each decimal number as an 8-bit number in the 1's complement form:
 - (a) 65 (b) +126 (c) -98
- 6. Express each decimal number as an 8-bit number in the 2's complement form:
 - (a) -58 (b) +112 (c) -136
- 7. Determine the decimal value of each signed binary number in the sign-magnitude form:
 - (a) 10011101
- (b) 01110100 (c) 10111011
- 8. Determine the decimal value of each signed binary number in the 1's complement form:
 - (a) 10111001
- (b) 01100100 (c) 10111101
- 9. Determine the decimal value of each signed binary number in the 2's complement form:
 - (a) 10111011
- (b) 01010100 (c) 10011000
- 10. What is the largest decimal number that can be represented in binary with eight bits?
- 11. Determine the weight of the 1 in the binary number 10000.
- 12. Convert each pair of decimal numbers to binary and add using the 2's complement form(8bit representation):
 - (a) -38 and -27 (b) 59 and -39 (c) 58 and 65 (d) -102 and -85
 - (e) 29 and -72 (f) 111 and -49
- 13. Convert each hexadecimal number to binary:
 - (a) 48A6 (b) F4C6 (c) B426 (d) 1A3D6
- 14. Convert each binary number to hexadecimal:
 - (a) 11110110 (b) 10101011 (c) 101110011011 (d) 10101101010 (e) 101011101100
- 15. Convert each hexadecimal number to decimal:
 - (a) 4226 (b) 6426 (c) 2B26 (d) ABC26 (e) 6F226
- 16. Convert each decimal number to hexadecimal:
 - (a) 3654 (b) 7824 (c) 8926 (d) 551 (e) 3682



- 17. Convert each of the following decimal numbers to BCD (8421):
 - (a) 4124 (b) 6139 (c) 918 (d) 2341 (e) 225 (f) 36455
- 18. Convert each of the BCD numbers to decimal:
 - (a) 1000110000 (b) 0010010110111 (c) 0011101000110 (d) 01001100100001
 - (e) 011101010100 (f) 100000000000 (g) 100101111000 (h) 0001011010000011
- 19. Determine which of the following even parity codes are in error:
 - (a) 100110010 (b) 011101010 (c) 101111111010001010
- 20. Determine which of the following odd parity codes are in error:
 - (a) 11110110 (b) 00110001 (c) 01010101010101010
- 21. Attach the proper even parity bit to each of the following bytes of data:
 - (a) 10100100 (b) 00001001 (c) 11111110
- 22. Convert each binary number to Gray code:
 - 11011 (b) 1001010 (c) 1111011101110
- 23. Convert each Gray code to binary:
 - (a) 1010 (b) 00010 (c) 11000010001
- 24. Add the following BCD numbers:
 - (a) 1001 + 0110 (b) 0011 + 1001
 - (c) 1001 + 1001 (d) 1001 + 0111
 - (e) 00110101 + 01100111
 - (f) 01010011 + 01011000
 - (g) 10010101 + 10010111
 - (h) 010101100011 + 001100101000