Group Homework 4

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1. Convert the following from Gray code to binary:

   $1011\ 1100\ 1101_{gray}$

   $\rightarrow$ $\boxed{1101\ 0111\ 0110_2}$

2. Convert the following from Gray code to binary:

   $1010\ 1000\ 1101_{gray}$

   $\rightarrow$ $\boxed{1100\ 1111\ 0110_2}$

3. Convert the following from binary to Gray code:

   $1011\ 0111\ 1010_2$

   $\rightarrow$ $\boxed{1110\ 1100\ 0111_{gray}}$

4. Convert the following from binary to Gray code:

   $1001\ 0110\ 1010_2$

   $\rightarrow$ $\boxed{1101\ 1101\ 1111_{gray}}$

5. Write the decimal equivalent of the following code:

   $1001\ 0001\ 0010\ 0011_{8421}$

   $\rightarrow$ $\boxed{9123_{10}}$

6. Write the decimal equivalent of the following code:

   $0101\ 1010\ 1001\ 1101_{642(-3)}$

   $\rightarrow$ $\boxed{1837_{10}}$

7. Write the decimal equivalent of the following code:

   $1011\ 1100\ 0000\ 11101_{2421}$

   $\rightarrow$ $\boxed{5617_{10}}$

8. Write the decimal equivalent of the following 2 out of 5 code:

   $01010\ 00011\ 00110_{74210}$

   $\rightarrow$ $\boxed{513_{10}}$

9. Write 5432_{10} using the 8421 code.

   5432_{10}

   $\rightarrow$ $\boxed{0101\ 0100\ 0011\ 0010_{8421}}$

10. Write 5432_{10} using the $642(-3)$ code.

    5432_{10}

    $\rightarrow$ $\boxed{1011\ 0100\ 1001\ 0010_{642(-3)}}$

11. Write 5432_{10} using the 2421 code.

    5432_{10}

    $\rightarrow$ $\boxed{1011\ 0100\ 0100\ 0010_{2421}}$

12. Write 5432_{10} using the 2 out of 5 code (74210).

    5432_{10}

    $\rightarrow$ $\boxed{01010\ 01001\ 00110\ 00101_{74210}}$

13. Convert the following decimal numbers to BCD numbers and perform the addition. Convert the answer back to decimal.

	454	$\rightarrow$			0100	0101	0100
+	573		+		0101	0111	0011
					1001	1100	0111
			+		0110	0110	
	$\boxed{1027_{10}}$	$\leftarrow$		0001	0000	0010	0111

    Overflow occurred.

14. Convert the following decimal numbers to excess 3 numbers and perform the addition. Convert the answer back to decimal.

	454	$\rightarrow$			0111		1000		0111
+	573		+		1000		1010		0110
				0001	0000		0010		1101
			+	0011	+ 0011	+	0011	−	0011
	$\boxed{1027_{10}}$	$\leftarrow$		0100	0011		0101		1010

    Overflow occurred.

15. Write the even parity bits for the following:

a.) 1 0 1 1 0 $\boxed{1}$

b.) 0 1 1 1 1 $\boxed{0}$

c.) 0 0 0 0 0 $\boxed{0}$

d.) 1 1 1 0 0 $\boxed{1}$

e.) 1 0 1 0 0 $\boxed{0}$

Block parity? $\rightarrow$ 1 0 0 0 1 0