CMPUT 329 - Computer Organization and Architecture II
Quiz # 2 — Fall 2003

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CMPUT 329 Honor Code

By turning in the quiz solution for grading, I certify that I have worked all the solutions on my own, that I have not copied or transcribed solutions from a classmate, someone outside the class, or from any other source. I also certify that I have not facilitated or allowed any of my classmates to copy my own solutions. I am aware that the violation of this honor code constitutes a breach of the trust granted me by the teaching staff, compromises my reputation, and subjects me to the penalties prescribed in Section 26.1 of the University of Alberta 2003/2004 Calendar.

Edmonton, September, 2003.

This is a **true** or **false** test. For each statement you have to indicate whether the statement is true or false. Use the capital letter T to indicate true, and the capital letter F to indicate false. You win 10 points for each correct answer. **You lose 5 points for each incorrect answer.** You are neither rewarded nor penalized for questions that you do not answer. If you answer all questions correctly you will make a maximum of 100 points. Regardless of how many questions you answer wrong, your score in the quiz cannot be below zero.

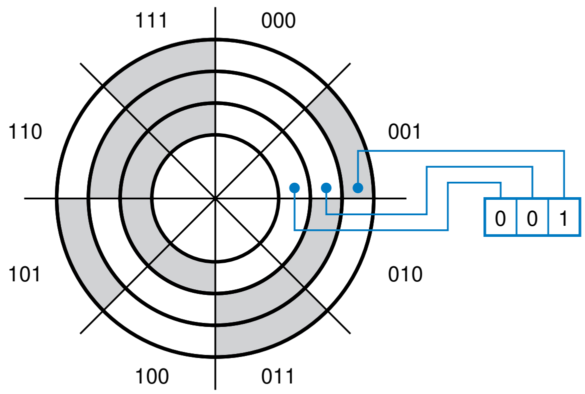

Figure 1: Mechanical encoding disk with a 3-bit code.

1. ( ) The following numbers represent the same quantity: 011111100001_2, 3741_8, and $7E1_{16}$.
2. ( ) If a code has a minimum distance of 2 between all the code words, than the code can detect any number of errors that occur in the transmission of a word.
3. ( ) A code is called and *even-parity code* if every valid code word has an even number of zeros.
4. ( ) When an error is detected in a block in one drive in a RAID system, we can reconstruct the block by computing the parity of the corresponding blocks in all the other drives.
5. ( ) The mechanical enconding disk shown in Figure 1 uses a 3-bit Gray code.
6. ( ) If we are operating with two-complement numbers, and the addition of two positive numbers results in a negative result, we say that the addition produced an *underflow*.
7. ( ) When you perform octal addition, if you add 47135_8 to 5125_8, three carry digits are generated.
8. ( ) In binary-coded decimal (BCD) notation the code word 1010 represents the decimal number 10.
9. ( ) In an $n - cube$, the binary number located in each vertex of the cube has $n - 1$ adjacent vertices.
10. ( ) The hamming distance between two binary numbers A and B measures how many bits of A are identical to bits of B.