Multiple-Choice Test

Chapter 01.04
Binary Representation

1. $(25)_{10} = (?)_2$
   (A) 100110
   (B) 10011
   (C) 11001
   (D) 110010

2. $(1101)_2 = (?)_{10}$
   (A) 3
   (B) 13
   (C) 15
   (D) 26

3. $(25.375)_{10} = (?.?)_2$
   (A) 100110.011
   (B) 11001.011
   (C) 10011.0011
   (D) 10011.110

4. Representing $\sqrt{2}$ in a fixed point register with 2 bits for the integer part and 3 bits for the fractional part gives a round-off error of most nearly
   (A) -0.085709
   (B) 0.0392
   (C) 0.1642
   (D) 0.2892

5. An engineer working for the Department of Defense is writing a program that transfers non-negative real numbers to integer format. To avoid overflow problems, the maximum non-negative integer that can be represented in a 5-bit integer word is
   (A) 16
   (B) 31
   (C) 63
   (D) 64

6. For a numerically controlled machine, integers need to be stored in a memory location. The minimum number of bits needed for an integer word to represent all integers between 0 and 1024 is
   (A) 8
   (B) 9
   (C) 10
   (D) 11

For a complete solution, refer to the links at the end of the book.