Digital Logic Design - Quiz #1

Name: _________________ ID: _________________ Score: _________________

1. $[15\%]$ Convert $(1900.302)_{10}$ to hexadecimal by means of multiplication and division.
   Note: For the fraction part, calculate up to 4 digits.

2. $[15\%]$ Division is composed of multiplications and subtractions. Perform the binary division 101110101 $\div$ 1101 to obtain a quotient and remainder.

3. $[15\%]$ Show the bit configuration that represents the decimal number 287 in (a) binary, (b) BCD, (c) ASCII, (d) ASCII with odd parity. **Hint:** The ASCII code of zero (0) is 30_{16}.

4. $[15\%]$ Find the complement of (a) $\overline{A}B + AB$ and (b) $(\overline{X} + \overline{Y})Z$.

5. $[15\%]$ Reduce the following Boolean expressions to the indicated number of literals:
(a) $\overline{X}\,\overline{Y} + XYZ + \overline{X}Y$ to three literals; (b) $X + Y(Z + \overline{X + Z})$ to two literals