

## CS 211 – Digital Logic Design First Term – 1439/1440 Assignment #1

Due: Wednesday, October 10, 2018

1. Convert the following numbers from the given base to the other three bases listed in the table:

<b>Decimal</b>	Binary	Octal	<b>Hexadecimal</b>
69.3125 <sub>10</sub>	?	?	?
?	$10111101.101_2$	?	?
?	?	$326.5_{8}$	?
?	?	?	C7.A <sub>16</sub>

- 2. Perform the following arithmetic operations using 2's complement arithmetic and assuming a word length of 8 bits:
  - a.  $17_{10} 69_{10}$
  - b.  $-12_{10} \times 11_{10}$
  - c.  $-116_{10} \div -21_{10}$
- 3. Calculate the decimal value which is equivalent to the binary value: 100010010110 in each of the following cases:
  - a. If it represents a BCD number.
  - b. If it represents a Gray Code.
  - c. If it represents a signed number in the sign-magnitude form.
  - d. If it represents a signed number in the 1's complement form.
- 4. Represent 69.3125<sub>10</sub> as a single-precision floating-point binary number.