**Assignment 3**

**Answer all the questions:**

1. Indicate whether overflow occurs in the following 6 bit 2’s complement arithmetic operations. Justify your answer.
2. Add +18 to +15 1M
3. Subtract +19 from -20. 1M
4. Design a circuit that generates the 9’s complement of a BCD digit *d* using full adders and other necessary gates. Note that the 9’s complement of *d* is 9 − *d*. 1.5M
5. Design a circuit using four full adders to determine how many of the bits in a seven-bit unsigned number are equal to 1. 1.5M