



CSE Department, North South University  
ETE131: Introduction to Telecommunications  
& Computer Engineering (SyR)  
Problem Sheet 2: Negative Binary Numbers

**Q1** Using a 8-bit 2's Complement system,  $M=10001100_2$  and  $N=01011101_2$   
Show how  $M-N$  is computed and give the result's binary and decimal representations.

**Q2** Using a 8-bit 2's Complement system,  $M=10001100_2$  and  $N=10100001_2$   
Show how  $M-N$  is computed and give the result's binary and decimal representations.

**Q3** Show the representation of the number -117 with 8-bits using:  
a) sign/magnitude                      b) 1's complement

**Q4.** Show the representation of the number -125 with 8-bits using:  
a) sign/magnitude                      b) 2's complement

**Q5.** Give the interpretation (i.e. decimal value) of 11101110, if it is stored with 8-bits using  
a) 2's complement                      b) unsigned integers

**Q6** Give the interpretation (i.e. decimal value) of 11001100, if it is stored with 8-bits using  
a) 1's complement                      b) sign/magnitude