Beni-Suef University
Academic year (2018-219)

Faculty of Computers and Information

Sheet 3: Data Storage

- **The submitted solutions should be handwritten and NOT typed/printed.**
- **The students will lose 3 marks if this homework not delivered on time**

1. Store 9 in an 8-bit memory location using unsigned representation. (Lab)
2. Store 300 in a 16-bit memory location.
3. What is the value of the 8-bit binary quantity 10101000 if it is interpreted as:
   a. An unsigned integer?
   b. A signed integer represented in sign/magnitude notation? (Lab)
4. Store +34 in an 8-bit memory location using sign-and-magnitude representation. (Lab)
5. Store -34 in an 8-bit memory location using sign-and-magnitude representation.
6. Retrieve the integer that is stored as 01101111 in sign-and-magnitude representation.
7. Retrieve the integer that is stored as 10110101 in sign-and-magnitude representation. (Lab)
8. Store the integer 30 in an 8-bit memory location using two's complement representation.
9. Store −30 in an 8-bit memory location using two's complement representation. (Lab).
10. Store −50 in an 8-bit memory location using two's complement representation.
11. Retrieve the integer that is stored as 00011100 in memory in two's complement format. (Lab).
12. Retrieve the integer that is stored as 10010110 in memory using two's complement format.
13. Perform the following additions using two's complement format and store the result in an 8-bit memory location.
    a. 72 + (-100) (Lab)
    b. (-35) + (-58)
    c. 47 + 23
    d. -39 + 92
    e. -19 + -7 (Lab)
    f. 44 + 45 (Lab)

With my best wishes;
Dr. Heba Hamdy