

Assignment - Numbering Systems

Note: Perform the following conversions on line paper and show your work for full marks.

1. Perform the following conversions (Convert from binary to decimal a to g and decimal to binary h to j):

- a) $101_2 = N_{10}$
- b) $11001_2 = N_{10}$
- c) $1111_2 = N_{10}$
- d) $10011110_2 = N_{10}$
- e) $10101_2 = N_{10}$
- f) $101101_2 = N_{10}$
- g) $11111110_2 = N_{10}$
- h) $100_{10} = N_2$
- i) $225_{10} = N_2$
- j) $129_{10} = N_2$

2. Using the double-dabble method, convert the following binary numbers to decimal equivalents.

- a) 100001
- b) 101101101
- c) 111111
- d) 11110000
- e) 1010101010
- f) 100100

3. Using the remainder method, convert the following decimal system numbers to their binary equivalents.

- a) 25
- b) 54
- c) 432
- d) 69
- e) 12008

4. Convert the following octal numbers to hexadecimal:

- a) 6
- b) 12
- c) 367
- d) 5555
- e) 123456

5. Convert the following hexadecimal numbers to decimal:

- a) AA
- b) FEDCBA
- c) D0-BE-D0
- d) B8C
- e) FF-FF-FF-FA
- f) BABE

6. Convert the following octal (base-8) numbers to decimal:

- a) 4
- b) 10
- c) 777
- d) 05726

7. Convert the following decimal numbers to octal:

- a) 5
- b) 9
- c) 625
- d) 1,024

8. Convert the following octal numbers to binary:

- a) 107
- b) 2746
- c) 66542
- d) 76543210

9. Convert the following binary numbers to octal:

- a) 110
- b) 011101
- c) 010101011
- d) 1111011101101
- e) 111110101100011010001

10. Convert the following hexadecimal numbers to octal:

- a) 2
- b) 8
- c) 10
- d) FE
- e) 2A4F2D

11. Convert the following decimal numbers to hexadecimal:

- a) 9
- b) 32
- c) 73
- d) 255
- e) 1,025
- f) 65536