National University of Computer and Emerging Sciences



**Laboratory Manual**

***(Introduction to Computing)***

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| Section | A |
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**Problem 1:**

*(Conversion between different number systems)*

1. Conversion from Binary (Base 2) to Decimal (Base 10)
2. 11111001
3. 11010011
4. 10110111
5. 01111110
6. Conversion from Decimal (Base 10) to Binary (Base 2)
7. 335
8. 267
9. 339
10. 1199
11. Conversion from Binary (Base 2) to Hexadecimal (Base 16)
12. 10110011
13. 10101111
14. 11110001
15. 11000101
16. Conversion from Hexadecimal (Base 16) to Binary (Base 2)
17. FF2
18. A9
19. DBF5
20. AEF
21. Conversion from Decimal (Base 10) to Hexadecimal (Base 16)
22. 189
23. 455
24. 313
25. 489
26. Conversion from Hexadecimal (Base 16) to Decimal (Base 10)
27. EFC
28. AEC
29. 6D
30. FFE
31. The Binary Number for F3A16 is:
32. 111100111010
33. 111100111110
34. 000000111010
35. 000011000100
36. What is the result when a decimal 5238 is converted to base 16?
37. 327.375
38. 12.166
39. 1388
40. 1476

**Problem 2:**

1. Convert your year of birth into base number system of your choice (other than decimal).
2. Addition of (10101101)2 and (11100100)2 is:

(a) (173)10 + (276)10 (b) (178)10 + (228)10  (c) (173)10 + (228)10

1. If you were going to use a base 18 number system, what letters would you use for numbers through 10 to 17? Using these letters, convert the following numbers to base 18 from base 10
   1. 1076
   2. 879
   3. 98079
   4. 1
2. You are given 4 symbols for counting, i.e, #, @, %, &. They represent the numbers from 0 to 3 respectively.
   1. What does the following sequence of characters represent in decimal? #%&
   2. What is representation of the number 325 in this system?
   3. What is the representation of your year of birth in this system?

***Remember:*** *Honesty always gives fruit (no matter how frightening is the consequence); and*

*Dishonesty is always harmful (no matter how helping it may seem in a certain situation)!*