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CPE185

<p align="center">Homework 1</p>

22. A binary bit stores a(n) **1 or a 0**

23. A computer K (pronounced kay) is equal to **1024** bytes.

24. A computer M (pronounced meg) is equal to **1024 K** bytes.

25. A computer G (pronounced gig) is equal to **1024** M bytes.

26. A computer P (pronounced peta) is equal to **1024** T bytes.

27. How many typewritten pages of information are stored in a 4G-byte memory?

About **one million**

28. The first I M byte of memory in a DOS-based computer system contains a(n) **System area**

and a(n) **transient program** area.

29. How large is the Windows application programming area?

2G or 3G for 32-bit mode and currently 8G for 64-bit mode

30. How much memory is found in the DOS transient program area?

640k

31. How much memory is found in the Windows systems area?

1G

32. The 8086 microprocessor addresses **1M** bytes of memory.

33. The Core2 microprocessor addresses **1T byte using a 40 bit address** bytes of memory.

34. Which microprocessors address 4G bytes of memory?

80386, 80486, Pentium, Pentium Pro. PH, PIII, P4, and Core2

35. Memory above the first 1M byte is called **Protected memory or extended memory**

36. What is the system BIOS?

The basic 110 system

37. What is DOS?

An early operating system called the Disk Operating System

57. Convert the following binary numbers into decimal:

(a) 1101.01   13.25

(b) 111001.0011   57.1875

(c) 101011.0101   43.3125

(d) 111.0001   7.0625

58. Convert the following octal numbers into decimal:

(a) 234.5   156.625

(b) 12.3   18.375

(c) 7767.07   4087.109375

(d) 123.45   83.578125

(e) 72.72   58.90625

59. Convert the following hexadecimal numbers into decimal:

(a) A3.3   163.1875

(b) 129.C   297.75

(cl AC.DC   172.859375

(d) FAB.3   4011.1875

(e) BB8.0D   3000. 05078125

60. Convert the following decimal integers into binary, octal, and hexadecimal:

(a) 23   binary: 101 11 octal: 27   hex: 17

(b) 107   binary: 11010I   octal: 153   hex: 6B

(c) 1238   binary: 10011010110   octal: 2326 and hex: 4D6 16

(d) 92   binary: 10111002   octal: 1348   hex: 5C

(e) 173   binary: 10101101   octal: 2558   hex: AD

61. Convert the following decimal numbers into binary, octal, and hexadecimal:

(a) 0.625   binary: 0.101   octal: 0.5   hex: 0.A

(b) .00390625   binary: 0.0000101   octal :0.024   hex: 0.0A

(c) .62890625   binary: 0.10100001   octal: 0.502   hex: 0.A1

(d) 0.75   binary: 0.11   octal: 0.6   hex:0.C

(e) .9375   binary: 0.1111 octal: 0.74 hex: 0.F

62. Convert the following hexadecimal numbers into binary-coded hexadecimal code (BCH):

(a) 23   0010 0011

(b) AD4   1010 1101 0100

(c) 34.AD   0011 0100. 1010 1101

(d) BD32   1011 1101 0011 0010

(e) 234.3   0010 00110100. 0011

63. Convert the following binary-coded hexadecimal numbers into hexadecimal:

(a) 11000010   C2

(b) 000100001111 110]   10FD

(e) lOll 1100   BC

(d) 0001 0000   10

(e) 10001011 lOIO   8BA

64. Convert the following binary numbers to the one's complement form:

(a) 1000 1000   0111 0111

(b) OJOI 1010   1010 0101

(c) 01110111   1000 1000

(d) 10000000   0111 1111

65. Convert the following binary numbers to the two's complement form:

(a) 1000000 I   0111 1111

(b) 10101100   0101 0100

(c) 1010 1111   0101 0001

(d) 1000 0000   1000 0000