Microprocessors – Tutorial 01

#	Student ID	Student Name	Grade (10)
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Q1	The 80286 addresses _____ bytes of memory.
Sol 1	16M bytes

Q2	What is the acronym MIPs?
Sol 2	Millions of instructions per second

Q3	A binary bit stores a(n) _____or a(n) _____.
Sol 3	A binary bit stores a 1 or a 0.

Q4	A computer M (pronounced meg) is equal to _____ K bytes.
Sol 4	1024K

Q5	A computer P (pronounced peta) is equal to _____ T bytes.
Sol 5	1024

Q6	The first 1M byte of memory in a DOS-based computer system contains a(n) _____ and a(n) _____area.
Sol 6	System area and transient program area

Q7	How much memory is found in the DOS transient program area?
Sol 7	640K

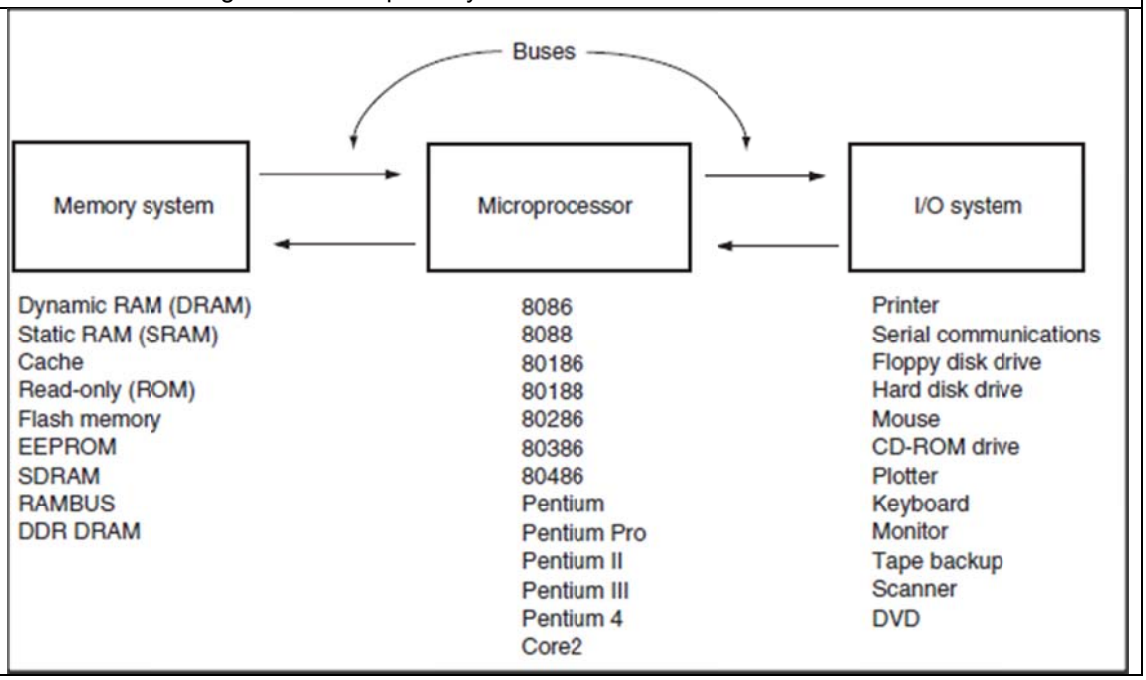
Q8	The 8086 microprocessor addresses _____ bytes of memory.
Sol 8	1M

Q9	Which microprocessors address 4G bytes of memory?
Sol 9	80386, 80486, Pentium, Pentium Pro, PII, PIII, P4, and Core2

Q10	What is the system BIOS?
Sol 10	The basic I/O system

Q11	What is the difference between an XT and an AT computer system?
Sol 11	The XT was used with the 8088 and 8086 and beginning with the 80286, the AT became the name of the system.

Q12	The personal computer system addresses _____ bytes of I/O space.
Sol 12	64K

Q13	Draw the block diagram of a computer system.
Sol 13	

Q14	List the three buses found in all computer systems
Sol 14	Address, data, and control buses

Q15	Which control signal causes the memory to perform a read operation?
Sol 15	MRDC'

Q16	If the signal MRDC' is a logic 0, which operation is performed by the microprocessor?
Sol 16	Memory read operation

Q17	Convert the following octal numbers into decimal: (a) 234.5 (b) 12.3 (c) 7767.07 (d) 123.45 (e) 72.72
Sol 17	(a) 156.625 (b) 18.375 (c) 4087.109375 (d) 83.578125 (e) 58.90625

Q18	Convert the following decimal integers into binary, octal, and hexadecimal: (a) 23 (b) 107 (c) 1238 (d) 92 (e) 173
Sol 18	(a) 10111_2, 27_8, and 17_{16} (b) 1101011_2, 153_8, and 6B (c) 10011010110_2, 2326_8, and $4D6_{16}$ (d) 1011100_2, 134_8, and $5C_{16}$ (e) 10101101_2, 255_8, and AD

Q19	Convert the following hexadecimal numbers into binary-coded hexadecimal code (BCH): (a) 23 (b) AD4 (c) 34.AD (d) BD32 (e) 234.3
Sol 19	(a) 0010 0011 (b) 1010 1101 0100 (c) 0011 0100 . 1010 1101 (d) 1011 1101 0011 0010 (e) 0010 0011 0100 . 0011

Q20	Convert the following binary numbers to the one's complement form: (a) 1000 1000 (b) 0101 1010 (c) 0111 0111 (d) 1000 0000
Sol 20	(a) 0111 0111 (b) 1010 0101 (c) 1000 1000 (d) 0111 1111

Q21	What is the ASCII code for the Enter key and what is its purpose?
Sol 21	Enter is a 0DH and it is used to return the cursor/print head to the left margin of the screen or page of paper.

Q22	Convert the following decimal numbers into both packed and unpacked BCD forms: (a) 102 (b) 44 (c) 301 (d) 1000
Sol 22	(a) packed = 00000001 00000010 and unpacked 00000001 00000000 00000010 (b) packed = 01000100 and unpacked 00000100 00000100 (c) packed = 00000011 00000001 and unpacked 00000011 00000000 00000001 (d) packed = 00010000 00000000 and unpacked 00000001 00000000 00000000 00000000

Q23	Convert the following BCD numbers (assume that these are packed numbers) to decimal numbers: (a) 10001001 (b) 00001001 (c) 00110010 (d) 00000001
Sol 23	(a) 89 (b) 9 (c) 32 (d) 1

Q24	Convert the following single-precision floating-point numbers into decimal numbers: (a) 0 10000000 11000000000000000000000 (b) 1 01111111 00000000000000000000000 (c) 0 10000010 10010000000000000000000
Sol 24	(a) +3.5 (b) -1.0 (c) +12.5