

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**WRITE THE LETTER OF YOUR ANSWER IN THE SPACE PROVIDED AT THE LEFT OF EACH QUESTION.**

- \_\_\_ 1. An ISA (Industry Standard Architecture) device bus connector carries **up to** \_\_\_ bits of data at a time.
- a. 8 bits
  - b. 16 bits
  - c. 32 bits
  - d. 64 bits
- \_\_\_ 2. A PCI (Peripheral Component Interconnect) device bus connector carries up to \_\_\_ bits of data at a time.
- a. 8 bits
  - b. 16 bits
  - c. 32 bits
  - d. 64 bits
- \_\_\_ 3. How many DMA (Direct Memory Access) channels are there in an AT-class PC?
- a. 4
  - b. 6
  - c. 8
  - d. 16
- \_\_\_ 4. How many Interrupt Request lines (IRQs) are there in an AT-class PC?
- a. 4
  - b. 8
  - c. 12
  - d. 16
- \_\_\_ 5. The term SIMM means:
- a. Single In-line Memory Module
  - b. Single Interrupt Memory Manager
  - c. Simple Intelligent Memory Manager
  - d. None of the above
- \_\_\_ 6. In an old 80386 DX CPU chip, the math co-processor . . .
- a. Is built into the CPU chip
  - b. Is NOT built into the CPU chip
  - c. Is part of the Overdrive chip
  - d. Is not available from Intel

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- \_\_\_ 7. In an 80486 DX or Pentium CPU chip, the math co-processor . . .
- a. Is built into the CPU chip
  - b. Is NOT built into the CPU chip
  - c. Is part of the Overdrive chip
  - d. Is not available from Intel
- \_\_\_ 8. The “Northbridge” chip on the motherboard controls the flow of data between:
- a. The CPU and the system RAM
  - b. The IRQ chip and the DMA chip on the motherboard
  - c. The device bus and the modem
  - d. None of the above
- \_\_\_ 9. The “Southbridge” chip on the motherboard controls the flow of data between:
- a. The CPU and the system RAM
  - b. The device bus and the Northbridge chip
  - c. The IRQ chip and the DMA chip on the motherboard
  - d. None of the above
- \_\_\_ 10. A USB connector on the back of the motherboard allows you to connect up to \_\_\_\_\_ devices in total:
- a. 8 devices
  - b. 32 devices
  - c. 127 devices
  - d. 1024 devices
- \_\_\_ 11. An AGP device bus connector carries up to \_\_\_\_\_ bits of data at a time:
- a. 128 bits
  - b. 64 bits
  - c. 32 bits
  - d. None of the above
- \_\_\_ 12. A CPU chip attaches to a motherboard through the use of what kind of connector?
- a. A standard plug and a soldering gun
  - b. A PLCC connector
  - c. A quad flat pack connector
  - d. A ZIF (Zero Insertion Force) socket

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- \_\_\_ 13. The dot pitch of the monitor is a measure of:
- The roundness of each pixel
  - The size of each pixel
  - The distance between any 2 pixels
  - The thickness of the glass screen
- \_\_\_ 14. The "refresh rate" of a monitor determines what about the video image?
- The normal life expectancy of the monitor
  - How many total pixels can be displayed on the screen
  - How many times per second the image is refreshed (or redrawn) on the screen
  - Whether the monitor is Super VGA compatible or not
- \_\_\_ 15. A VGA video card will have what kind of port:
- 9-pin male connector on the video card (shows pins)
  - 25-pin male connector on the video card (shows pins)
  - 9-pin female connector on the video card (shows sockets)
  - 15-pin female connector on the video card (shows sockets)
- \_\_\_ 16. You would expect to get the following MINIMUM resolution on a "Super VGA" monitor running at a .28 dot pitch:
- 320 X 200 resolution, with 16 colors
  - 640 X 200 resolution, with 64 colors
  - 1620 X 1024 resolution, with 65,535 colors
  - 800 X 600 resolution, with 256 colors
- \_\_\_ 17. A motherboard, a video card, and a SCSI host adapter all have something on them that ensures IBM-compatibility back to the original IBM PC; this component would be called:
- A warranty from the manufacturer
  - SDRAM DIMMs
  - A ROM BIOS chip
  - A digital-to-analog (DAC) chip

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- \_\_\_ 18. All of the following are true about an IDE-class hard drives, **EXCEPT**:
- a. It has a 40-pin data cable connection on it
  - b. It has a 50-pin data cable connection on it
  - c. It has master/slave jumpers on it
  - d. It can connect to any of the connectors on the data cable
- \_\_\_ 19. Logical Block Addressing mode (LBA) does what for you as a PC technician?
- a. It launches a burst-mode architecture driver for your hard disk
  - b. It lies to the BIOS about the architecture of the hard disk
  - c. It lays a block of addresses that lets the hard disk write to the RAM
  - d. None of the above
- \_\_\_ 20. A hard disk is measured in terms of what kinds of divisions:
- a. Drums, bands and 9-pin heads
  - b. Canisters, holders, and storage devices
  - c. Cylinders, heads, and sectors per track
  - d. None of the above
- \_\_\_ 21. A FAT-32 partition table has what advantage over a FAT-16 partition table?
- a. The hard drive will only work with 32-bit applications
  - b. The hard drive can be formatted as one single partition, **regardless of size**
  - c. The hard disk will run faster due to increased bandwidth
  - d. None of the above
- \_\_\_ 22. A device you would plug into a bus connector on a motherboard (like a modem, sound card or NIC) **COULD** use all of the following things listed below, **EXCLUDING**:
- a. A port address
  - b. A broadband spectrum analyzer
  - c. A DMA channel
  - d. An IRQ level

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- \_\_\_ 23. A parallel port is always:
- a. a 9-pin female port on an adapter card (shows sockets)
  - b. a 9-pin male port on an adapter card (shows pins)
  - c. a 25-pin female port on an adapter card (shows sockets)
  - d. a 25-pin male port on an adapter card (shows pins)
- \_\_\_ 24. A serial port is always:
- a. a 9-pin female port on an adapter card (shows sockets)
  - b. a 9-pin or 25-pin male port on an adapter card (shows pins)
  - c. a 25-pin female port on an adapter card (shows sockets)
  - d. a 15-pin female port on an adapter card (shows sockets)
- \_\_\_ 25. A current technology network interface card (NIC) should have all of the following, **EXCEPT**:
- a. A link light to show proper connection to a hub or router
  - b. Lights to show speed of data transmission
  - c. A MIDI interface connector
  - d. An RJ-45 data cable connector
- \_\_\_ 26. A 56Kbps modem
- a. Has one RJ-11 cable connector on it
  - b. Has two RJ-11 cable connectors on it
  - c. Has one RJ-45 cable connector on it
  - d. Has one RJ-45 cable connector and also a BNC connector on it
- \_\_\_ 27. An IRQ (Interrupt Request):
- a. Allows the hardware to prioritize multiple requests for the same resources
  - b. Is something you can't change in your PC
  - c. Improves the efficiency of your hard disk
  - d. Isn't supported in an XT-class PC
- \_\_\_ 28. A **serial port device** (either a serial port or a modem) can be set to what IRQ levels:
- a. either IRQ 7 or IRQ 5
  - b. either IRQ 4 or IRQ 3
  - c. only to IRQ 14
  - d. either IRQ 9 or IRQ 10

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- \_\_\_ 29. A **parallel port** will normally be set to what IRQ level:
- a. IRQ 3
  - b. IRQ 8
  - c. IRQ 14 or 15
  - d. IRQ 7 or 5
- \_\_\_ 30. A **network card** can be set to what IRQ level:
- a. whatever IRQ level the card will support
  - b. only to IRQ 5 and 8
  - c. whatever IRQ is free in the system
  - d. Both A and C together
- \_\_\_ 31. I hand you a stick of memory that has a 3-part connector on the bottom, and the label says something about 168 pins. You would suspect that this device is:
- a. A SIMM
  - b. A ROM BIOS chip
  - c. A DIMM
  - d. A cache memory controller
- \_\_\_ 32. I hand you a card that has on the back of it a BNC connector, an RJ-45 connector, and something that looks like a game port on it. You would suspect that it is:
- a. A serial port card
  - b. A network card with multiple cable connectors
  - c. A multifunction card
  - d. A memory expansion card
- \_\_\_ 33. I hand you a card that has a small 15-socket female port on the back, and a bus connector on the bottom of the board. You would suspect that it is:
- a. A multifunction card
  - b. A PCI or AGP video card
  - c. A serial port card
  - d. An internal modem

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- \_\_\_ 34. I hand you a card that has a Centronics port on the back, a 50-pin cable connector on the board, and something marked "Terminator" plugged in the center of the board. You would suspect that it is:
- a. A serial port card
  - b. A hard disk/floppy disk controller
  - c. A SCSI host adapter
  - d. An internal modem
- \_\_\_ 35. I hand you what is obviously a motherboard. How do you tell what type of motherboard it is:
- a. Look for the CPU chip
  - b. Look for an integrated drive controller and video card
  - c. Look at what type of bus connections it has
  - d. Both A and C are true
- \_\_\_ 36. A floppy drive cable is 34-pins wide. When you connect the "twisted" part of the cable to the floppy drive, that identifies the drive to the system as the what:
- a. The B: drive
  - b. The A: drive
  - c. It makes no difference which plug you use
  - d. Call Bill; he'll know
- \_\_\_ 37. An adapter card (of any kind) can be identified as a **16-bit ISA device** by what criteria:
- a. If it has 2 sets of gold contacts (goldfingers) on the bottom of the card
  - b. If it has 1 set of gold contacts (goldfingers) on the bottom of the card
  - c. If it has 3 sets of gold stubs on the right-hand side of the board
  - d. If it has a 16450 or 16550 UART chip on it
- \_\_\_ 38. Four steps are necessary to prepare a hard disk for use (**three of which YOU do**):
- a. Buy it, plug it in, SCANDISK it, and then run DEFRAG
  - b. Plug in the data cable, plug in the power cable, format it, and auto-detect it in the BIOS
  - c. Low-level format it, run FDISK on it, run FORMAT on it, and install an OS on it
  - d. Format it, run FDISK on it, and install your Windows software, and install LBA mode

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- \_\_\_ 39. If you are performing a low-level format on a hard disk (**which you rarely should need to do**), you will need to know **more than anything else**:
- The date code on the drive, showing when the warranty expires
  - The cylinder and head count of the drive
  - Where your textbook from the class is, which has the specs on your drive
  - Bill's work phone number
- \_\_\_ 40. Interleave is defined as:
- The rate at which the controller delivers data to the hard drive
  - The speed of the controller in megahertz
  - The way the drive monitors the rotational speed
  - The maximum data transfer capability of the drive
- \_\_\_ 41. **If a hard drive in an IBM PC is interleaved at 2 to 1 ratio (2:1)**, this is what happens:
- The controller delivers data sequentially, like a record player
  - The controller writes one sector, then skips a sector
  - The controller writes one sector, then skips 2 sectors
  - None of the above
- \_\_\_ 42. Why don't all hard disk controllers work at a 1:1 interleave:
- The engineers weren't very bright
  - IBM designed them that way
  - SCSI drive sub-systems weren't invented until 1986
  - Older, slower systems can't transfer data that rapidly
- \_\_\_ 43. In order to perform a low-level format, you will need to:
- Make sure to buy only IDE drives; they come from the factory low-level-formatted
  - Have (or buy) a program from the manufacturer that will do this format for you
  - Use a generic low-level format program you can download from the Internet
  - Run FDISK from the DOS prompt
- \_\_\_ 44. The low-level format does what:
- Makes your disk bootable
  - Changes your DOS version
  - Puts the two hidden DOS files on the disk
  - Performs a controller level format, placing magnetic markings on the disk

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- \_\_\_ 45. IO.SYS performs what function in the boot-up process:
- a. Permits operation of your floppy and hard drives
  - b. Permits input and output to the serial and parallel ports
  - c. It acts as the boot loader, beginning the load-up routine of MS-DOS
  - d. None of the above
- \_\_\_ 46. CONFIG.SYS performs what function in the boot-up process:
- a. It allows you to access extended memory and load driver software
  - b. It configures your PC to use specific devices and to reset DOS defaults
  - c. It lets you reset "Files" and "Buffers" to different values
  - d. All of the above
- \_\_\_ 47. COMMAND.COM performs what function in the boot-up process:
- a. It lets you convert extended memory into expanded memory
  - b. It allows you to invoke commands from the DOS prompt
  - c. It lets you reset files and buffers to different values
  - d. It lets you check your hard disk for lost clusters
- \_\_\_ 48. MSDOS.SYS performs what function in the boot-up process:
- a. It contains the bulk of the machine code that allows DOS to operate
  - b. It gives you a DOS prompt that shows your current directory
  - c. It is your extended memory driver
  - d. It displays the configuration of your computer's components
- \_\_\_ 49. AUTOEXEC.BAT performs what function in the boot-up process:
- a. It locates the highest block of extended memory
  - b. It tells you "Hit any key to continue"
  - c. It contains your user-defined start-up routines (like a menu program)
  - d. None of the above
- \_\_\_ 50. Which of the following is NOT checked in the POST test:
- a. The operation of your floppy and hard drives
  - b. The volume of your speaker
  - c. The operation of your memory chips
  - d. The operation of your motherboard and CPU



**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

63. **CIRCLE ONE:** Expanded memory is located (**by definition**) on a separate board or device, not on the motherboard.

True      False

64. **CIRCLE ONE:** The DOS program FDISK makes your hard disk bootable, putting the 2 hidden system files and COMMAND.COM into the boot sector.

True      False

65. **CIRCLE ONE:** The partition table tells the operating system how big the hard drive is in total space, and how the drive is divided into logical sections, even if it is partitioned into only one section.

True      False

**WRITE THE LETTER OF YOUR ANSWER IN THE SPACE PROVIDED AT THE LEFT OF EACH QUESTION.**

- \_\_\_ 66. You come into an office, and the AT-class computer is not working. The monitor says "Fixed Disk 0 Error". You try booting off a bootable DOS disk, and you get to the A:\> prompt, but can't get to the C:\> drive. You get a message "Invalid drive specification" when you try to go to C:\>. The hard disk is 2 months old, and the PC is five years old. What would you do?

- a. Try replacing the hard disk; it's still under warranty.
- b. Try to low-level and re-format the hard disk.
- c. Try checking the setup program first, and replacing the CMOS battery if needed.
- d. Try replacing the hard disk controller.

- \_\_\_ 67. You come into an office, and the AT-class computer is not working. You try booting off a bootable DOS disk, and you get nothing. You get a message "601" and "1790" when you try to boot up. The PC is six months old. The user was operating the computer while the Hoover lady was vacuuming the office, he heard a popping sound inside the case of the PC, and suddenly the drives just quit working. What would you do?

- a. Try replacing the hard and floppy disk drives; they're still under warranty.
- b. Consider sending the computer back to the company; it's obviously defective.
- c. Try replacing the CMOS battery and check the setup program first before anything else.
- d. Try replacing the hard disk/floppy disk controller.

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- \_\_\_ 68. You come into an office, and the AT-class computer is not working. The monitor says "Keyboard error", but the user swears the keyboard is plugged in. He even turns the computer around to show you how it's plugged in to the computer. There is a keyboard, and a mouse, both plugged into the computer. Both have the same kind of plug at the end of the cable. What would you do?
- Replace the keyboard; it's obviously defective.
  - The keyboard BIOS chip on the motherboard must have failed; I'll replace it.
  - Make sure that the keyboard is plugged into the keyboard plug, and the mouse into the mouse plug BEFORE doing anything else.
  - Replace the cable on the keyboard; it may have been damaged.
- \_\_\_ 69. You come into an office, and the computer IS working properly. However, the user can't print a document to their local printer (the one plugged directly to the computer). Of the following 4 things to do, what would you do FIRST?
- Check to see if the printer driver is set up properly in the word processing software.
  - Check to see if the printer is turned on and the printer cable is connected properly.
  - Check to see if the network software is working properly.
  - Check to see if the printer needs a new ribbon.
- \_\_\_ 70. You come into an office, and the AT-class computer is not working. Nothing happens when you turn on the computer; no beeps, lights, or sounds. The monitor and PC are properly plugged in, both to the surge suppressor and to the units. The surge suppressor's fuse is blown, and you replace the fuse. Still, nothing happens with the PC. You smell the faint smell of burned circuits. At that moment, the person who also works in that office walks in and around you, with a hot cup of coffee he heated in the microwave a few minutes ago. His computer is fine, but it's plugged into another wall socket in another office. What would you do?
- Test the wall socket to see if there is power before doing anything else.
  - Consider replacing the power supply; it may have been fried.
  - Replace the surge suppressor; it may have been fried.
  - Consider replacing the computer with another one.

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- \_\_\_ 71. You come into an office, and the computer is not working properly. The setup program is fine, the hard disk is working, the monitor seems OK, but the computer just won't boot up from the hard disk. You can boot up from a bootable DOS disk, and you can get to the C:\> drive and execute programs, but you can't boot from C:\>. COMMAND.COM and the two hidden files are NOT erased. As you are working, someone mentions how they saw what looked like a green caterpillar on their screen last week. The computer also displays a message that says "Happy Birthday Joshi". What would you do?
- Check the inside of the PC for caterpillar infestation.
  - Re-format the hard disk using the Format C: /S command.
  - Check your hard disk for viruses with a scanning program on a write-protected floppy disk.
  - Check to see if the hard disk controller is working; swap in another hard disk & test it.
- \_\_\_ 72. If you hear the fan running but your computer does nothing, \_\_\_ .
- Your hard disk drive is malfunctioning.
  - Your keyboard is malfunctioning, unplugged, or in the wrong plug.
  - Your power supply is defective or the motherboard is malfunctioning.
  - One of your memory chips is malfunctioning.
- \_\_\_ 73. If you don't hear the fan running and your computer does nothing, \_\_\_ .
- Your power supply is malfunctioning.
  - Your keyboard is malfunctioning, unplugged, or in the wrong plug.
  - Your motherboard is malfunctioning.
  - Check to see if the power cord is attached before opening up the case.
- \_\_\_ 74. If you get a 201 error when powering up your computer, \_\_\_ .
- Your floppy disk drive is malfunctioning.
  - Your keyboard is malfunctioning, unplugged, or in the wrong plug.
  - Your math coprocessor is malfunctioning.
  - One of your memory chips is malfunctioning.
- \_\_\_ 75. If you get a 601 error when powering up your computer, \_\_\_ .
- Your floppy disk drive is malfunctioning.
  - Your keyboard is malfunctioning, unplugged, or in the wrong plug.
  - Your hard disk is malfunctioning.
  - One of your memory chips is malfunctioning.

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- \_\_\_ 76. If you get a 301 error when powering up your computer, \_\_\_ .
- a. Your floppy disk drive is malfunctioning.
  - b. Your keyboard is malfunctioning, unplugged, or in the wrong plug.
  - c. Your hard disk is malfunctioning.
  - d. One of your memory chips is malfunctioning.
- \_\_\_ 77. If you get a 1701 error when powering up your computer, \_\_\_ .
- a. Your floppy disk drive is malfunctioning.
  - b. Your keyboard is malfunctioning, unplugged, or in the wrong plug.
  - c. Your hard disk is malfunctioning.
  - d. One of your memory chips is malfunctioning.
- \_\_\_ 78. If you get a 701 error when powering up your computer, \_\_\_ .
- a. Your hard disk drive is malfunctioning.
  - b. Your keyboard is malfunctioning, unplugged, or in the wrong plug.
  - c. Your math coprocessor is malfunctioning.
  - d. One of your memory chips is malfunctioning.
- \_\_\_ 79. Which networking program allows you to log into a network, either a Microsoft or a Novell network?
- a. The client software
  - b. The protocol used for the network
  - c. The network card driver
  - d. LOGNET.EXE
- \_\_\_ 80. Which networking program provides the “language” or rules needed for the network to communicate from one point to another?
- a. The client software
  - b. The protocol used for the network, like TCP/IP
  - c. The network card driver
  - d. NLSFUNC.EXE
- \_\_\_ 81. What is the correct port address for COM1: (serial port 1):
- a. 3BA (hexadecimal)
  - b. 3BC "
  - c. 3F8 "
  - d. 2F8 "

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- \_\_\_ 82. What is the correct port address for COM2: (serial port 2):
- a. 3BA (hexadecimal)
  - b. 3BC "
  - c. 3F8 "
  - d. 2F8 "
- \_\_\_ 83. What are the correct port addresses for COM3: and COM4: (serial ports 3/4):
- a. 378 and 3BC (hexadecimal)
  - b. 3E8 and 2E8 "
  - c. 220 and 330 "
  - d. None of the above
- \_\_\_ 84. What are the correct (acceptable) port addresses for LPT1: (parallel port 1):
- a. 378 or 3BC (hexadecimal)
  - b. 3E8 or 2E8 "
  - c. 220 or 330 "
  - d. None of the above
- \_\_\_ 85. What are the correct (acceptable) port addresses for LPT2: (parallel port 2):
- a. 3F0 or 1F0 (hexadecimal)
  - b. 220 or 330 "
  - c. 378 or 278 "
  - d. 3E8 or 2E8 "
86. **CIRCLE ONE:** When installing a motherboard into a new case, screw the board down tightly to the metal frame; plastic spacers are unnecessary.
- True      False
87. **CIRCLE ONE:** After installing a motherboard to the case, install only the speaker and power supply connectors; test the motherboard by listening for beep codes before proceeding any further.
- True      False
88. **CIRCLE ONE:** When installing cable connectors onto the drive controller/interface card, insert the striped end of the cable closest to pin 1 on the connector.
- True      False

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

89. **CIRCLE ONE:** During testing of the computer, you notice that both the floppy drive lights are solid on, all the time. This indicates proper operation of the drives, and there is no problem.
- True      False
90. **CIRCLE ONE:** For every device in your computer, you need the correct software driver appropriate for that specific operating system, in order to make that hardware device operate properly.
- True      False
91. **CIRCLE ONE:** ISA bus connectors are black in color, and have a 1-part or 2-part connector socket.
- True      False
92. **CIRCLE ONE:** CMOS batteries installed on the motherboard are usually silver in appearance, and can be easily removed and replaced by the technician when necessary.
- True      False
93. **CIRCLE ONE:** PCI bus connectors are all brown in color, and only are used for video card devices.
- True      False
94. **CIRCLE ONE:** Installing 2 devices that use the same port address is acceptable; the devices will share that location in memory, and no device conflicts will occur.
- True      False
95. **CIRCLE ONE:** Installing 2 devices that use the same interrupt level may be acceptable; the devices **MUST** have unique port addresses, and the software you use must be able to differentiate between the 2 devices by their port address. Otherwise, the devices won't work correctly.
- True      False
96. The following keystroke sequences can be used to access the setup program on your AT-class PC during POST:
- Ctrl-Alt-Esc
  - The Delete key
  - The F2 key
  - Any or all of the above

**ENT 284 - PC REPAIR: TEST #1**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

97. POST stands for the \_\_\_\_\_.

98. List three kinds of devices that might be found on a typical network:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

99. List at least three things that must be installed (hardware or software) on a PC in order for it to run on a network.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

100. CMOS RAM contains a record of what about your computer?

\_\_\_\_\_  
\_\_\_\_\_

**COMMENTS/QUESTIONS ABOUT THE CLASS OR TEST:** (Optional - If you have questions, please include them here. Thanks.)

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