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Part I

COMPTIA A+

220-701

ESSENTIALS EXAM

Domain 1.0 Hardware

Domain 2.0 Troubleshooting, Repair, and Maintenance

Domain 3.0 Operating Systems and Software

Domain 4.0 Networking

Domain 5.0 Security

Domain 6.0 Operational Procedure

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HARDWARE

1. What is the most commonly used form factor today?
 - A. DIP
 - B. ATX
 - C. NLX
 - D. POST220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
2. The first ATX power supplies and motherboards used a single power connector. What is the name of this connector?
 - A. Transformer
 - B. Transistor
 - C. Resistor
 - D. P1 connector220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
3. Which of the following, if supported by the operating system, can turn off the power to a system after the shutdown procedure is done?
 - A. Soft switch
 - B. Joule
 - C. Riser card
 - D. P1 connector220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
4. What form factor is a major variation of ATX and addresses some technologies that have emerged since the original development of ATX?
 - A. Soft switch
 - B. MicroATX
 - C. NLX
 - D. POST220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

5. What reduces the total cost of a system by reducing the number of expansion slots on the motherboard, reducing the power supplied to the board, and allowing for a smaller case size?
- A. NLX
 - B. MicroATX
 - C. FlexATX
 - D. BTX

220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

6. Which of the following is commonly used in slimline and all-in-one cases but can fit into any FlexATX, MicroATX, or ATX case that follows the ATX 2.03 or higher standard?
- A. PicoBTX
 - B. NLX
 - C. FlexATX
 - D. BTX

220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

7. What form factor was designed by Intel in 2003 for flexibility and can be used by everything from large tower systems to those ultra-small systems that sit under a monitor?
- A. BTX
 - B. MicroATX
 - C. FlexATX
 - D. P1 connector

220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

8. Which of the following designs focuses on reducing heat with better airflow and improved fans and coolers?
- A. BTX
 - B. MicroATX
 - C. FlexATX
 - D. NLX

220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

9. What form factor for low-end personal computer motherboards was developed by Intel in 1998 to improve on an older and similar form factor, called the LPX form factor?
- A. BTX
 - B. MicroATX
 - C. FlexATX
 - D. NLX

220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

10. What is located on the edge of an NLX motherboard?
- A. Diode
 - B. Riser card
 - C. Joule
 - D. Inverter
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
11. What houses the power supply, motherboard, expansion cards, and drives?
- A. Capacitor
 - B. Riser card
 - C. Transformer
 - D. Computer case
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
12. What is the name of the first LGA socket?
- A. LGA1366 socket
 - B. PGA 66 socket
 - C. LGA775 socket
 - D. SPGA1336 socket
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
13. Which statement is true?
- A. The X58 chipset supports the Intel LGA1366 socket, the Core i7 processors, and PCI Express Version 2.
 - B. The X58 chipset has the ability to control memory.
 - C. The X75 chipset supports the Pentium Extreme Edition processor, multiple video cards, and up to 8 GB of memory.
 - D. The P25 chipset supports up to 8 GB of DDR3 or DDR2 memory.
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
14. What name is used to describe a bus that does not run in sync with the system clock?
- A. Sector
 - B. Jumper
 - C. Joule
 - D. Expansion bus
- 220-701 A+ Objective, “1.2 Explain motherboard components, types, and features”
15. Which statement is true?
- A. The frequency state is a command to the processor to wait for slower devices to catch up.
 - B. The first PCI bus had a 32-bit data path, supplied 5 V of power to an expansion card, and operated at 33 MHz.
 - C. A Universal PCI card uses a 3.3-V only.
 - D. PCI- X introduced the 64-bit, 3.3-V PCI slot.
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

16. What term is sometimes used interchangeably with throughput?
- A. Boot loader
 - B. CrossFire
 - C. Bandwidth
 - D. Latency
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
17. Which of the following is focused on technologies that target the server market?
- A. PCI-X
 - B. PCI Express
 - C. AGP
 - D. AMR
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
18. What slot contains a single lane for data, which is actually four wires?
- A. PCI Express x16
 - B. PCI Express x8
 - C. PCI Express x1
 - D. PCI Express x4
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
19. Which statement is false?
- A. The original PCIe allowed for 150 W.
 - B. PCIe Version 1.1 increased the wattage to 225 watts by allowing two 6-pin connectors from the power supply to the card.
 - C. PCIe Version 2 tripled the frequency of the PCIe bus.
 - D. PCIe Version 2 also allows for up to 32 lanes on one slot.
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
20. Which statement is false?
- A. A motherboard will have a PCI Express x16 slot or an AGP slot but not both.
 - B. AGP has mostly been replaced by PCI Express.
 - C. AGP standards include three major releases (AGP 1.0, AGP 2.0, and AGP 3.0)
 - D. You can only use a riser card in an NLX system.
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

21. Which statement is false?
- A. If an AGP video card does not use the extra pins provided by the AGP Pro slot, it can still be inserted into the AGP Pro slot if it has a registration tab that fits into the end of the Pro slot near the center of the motherboard.
 - B. APG 3.0 cards can be installed in an AGP 1.5-V slot. Signals are also put on the data bus using 1.5 V.
 - C. A universal AGP video card can fit into a universal AGP slot.
 - D. An AGP video card will be keyed to 1.5 V or 3.3 V.
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
22. What card has part of its audio, modem, or networking logic on the card and part on a controller on the motherboard?
- A. CNR
 - B. Ethernet
 - C. Riser
 - D. PCI
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
23. Which statement is false?
- A. An ACR slot looks like a PCI slot, but it sits a little closer to the rear of the motherboard than does a PCI slot.
 - B. ACR cards might be used for wireless or wired networking, FireWire, or modems.
 - C. A CNR slot is larger than a PCI slot but about the same height.
 - D. AMR and CNR slots are rarely used today, and it’s next to impossible to find the cards that fit them.
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
24. What name is used to describe ports that come directly off the motherboard?
- A. Jumpers
 - B. Joules
 - C. I/O shields
 - D. On-board ports
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
25. Which of the following might have several internal connectors, including parallel ATA connectors (also called EIDE connectors), a floppy drive connector, serial ATA connectors, SCSI connectors, or a FireWire (IEEE 1394) connector?
- A. Joule
 - B. Motherboard
 - C. I/O shields
 - D. On-board ports
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

26. What program can easily make changes to the setup values stored in CMOS RAM?
- A. BIOS setup
 - B. Ntldr
 - C. CMOS
 - D. I/O shield
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
27. Some older motherboards and expansion cards store setup data using which of the following?
- A. Scalable Link Interface
 - B. Accelerated Graphics Port
 - C. Dual inline package (DIP) switch
 - D. Staggered pin grid array
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
28. Which statement is false?
- A. A DIP switch has an ON position and an OFF position.
 - B. If you add or remove equipment, you can communicate that to the computer by changing a DIP switch setting.
 - C. When you change a DIP switch setting, you should use a pointed instrument such as a ballpoint pen to push the switch.
 - D. You must replace the entire motherboard if one port fails.
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
29. Which of the following is considered open or closed based on whether a cover is present on two small posts or metal pins that stick up off the motherboard?
- A. Partition table
 - B. MBR
 - C. Jumpers
 - D. On-board ports
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
30. Which statement is false?
- A. A jumper is closed if the cover is in place, connecting the two pins that make up the jumper.
 - B. Setup information about the BIOS can be stored by setting a jumper on (closed) or off (open).
 - C. A jumper is open if the cover is not in place.
 - D. Computers today store most configuration information in CMOS RAM.
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

31. What term refers to the computer bringing itself up to a working state without the user having to do anything but press the on button?
- A. Booting
 - B. Defragmenting
 - C. Partitioning
 - D. Standoff
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
32. Which of the following involves turning on the power with the on/off switch?
- A. Hard boot
 - B. Defragmenting
 - C. Soft boot
 - D. Standoff
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
33. Which of the following involves using the operating system to reboot?
- A. Hard boot
 - B. Cold boot
 - C. Soft boot
 - D. Standoff
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
34. What term describes programming contained on the firmware chip on the motherboard that is responsible for getting a system up and going and finding an OS to load?
- A. I/O shield
 - B. Startup BIOS
 - C. CMOS
 - D. Ethernet
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
35. Which of the following surveys hardware resources and needs and assigns system resources to meet those needs?
- A. CMOS
 - B. Startup BIOS
 - C. Ethernet
 - D. MBR
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

36. Which of the following begins the startup process by reading configuration information stored primarily in CMOS RAM and then compares the information to the hardware: the processor, video slot, PCI slots, hard drive, and so on?
- A. MBR
 - B. Startup BIOS
 - C. CMOS
 - D. BootMgr
- 220-701 A+ Objective 1.2, "Explain motherboard components, types, and features"
37. Which of the following can be found at the beginning of the boot drive (usually drive C)?
- A. Ntldr
 - B. Startup BIOS
 - C. Riser card
 - D. OS boot record
- 220-701 A+ Objective 1.2, "Explain motherboard components, types, and features"
38. What contains a small program that points to a larger OS program file that is responsible for starting the OS load?
- A. Ntldr
 - B. Startup BIOS
 - C. BootMgr
 - D. Boot record
- 220-701 A+ Objective 1.2, "Explain motherboard components, types, and features"
39. Which of the following contains a list of instructions stored in a file?
- A. Ntldr
 - B. Program file
 - C. BootMgr
 - D. Boot record
- 220-701 A+ Objective 1.2, "Explain motherboard components, types, and features"
40. What does the OS boot record program point to in Windows Vista?
- A. BootMgr
 - B. Program file
 - C. Ntldr
 - D. Boot record
- 220-701 A+ Objective 1.2, "Explain motherboard components, types, and features"

41. For Windows XP, Ntldr is responsible for loading the OS and is therefore called which of the following?

- A. BootMgr
- B. Program file
- C. Boot loader program
- D. Boot record

220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

42. What are two standards for the interface between firmware on the motherboard and the operating system?

- A. UEFI and GPT
- B. BIOS and EFI
- C. MBR and GPT
- D. EFI and UEFI

220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

43. What disk partitioning system can support up to 128 partitions?

- A. Ntldr
- B. GPT
- C. UEFI
- D. EFI

220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

44. What are the three basic components of a processor?

- A. A register, the CPU, and a backside bus
- B. An input/output unit, the CPU, and a backside bus
- C. An input/output unit, a control unit, and one or more arithmetic logic units (ALUs)
- D. A control unit, a register, and a backside bus

220-701 A+ Objective 1.4, “Explain the purpose and characteristics of CPUs and their features”

45. Which of the following holds counters, data, instructions, and addresses that the ALU is currently processing?

- A. Registers
- B. Buses
- C. Control unit
- D. ALU

220-701 A+ Objective 1.4, “Explain the purpose and characteristics of CPUs and their features”

46. What term is used to describe the portion of the internal bus that connects the processor to the internal memory cache?
- A. Front-side bus
 - B. Internal bus
 - C. Left-side bus
 - D. Back-side bus

220-701 A+ Objective 1.4, “Explain the purpose and characteristics of CPUs and their features”

47. What term is used to describe the speed at which the processor operates internally?
- A. Multiplier
 - B. Processor frequency
 - C. Overclocking
 - D. Throttling

220-701 A+ Objective 1.4, “Explain the purpose and characteristics of CPUs and their features”

48. What occurs when you run a motherboard or processor at a higher speed than the manufacturer suggests?
- A. Cooling
 - B. Multiprocessing
 - C. Overclocking
 - D. Throttling

220-701 A+ Objective 1.4, “Explain the purpose and characteristics of CPUs and their features”

49. What sits on top of the processor and consists of a fan and a heat sink?
- A. Cooler
 - B. Triple core
 - C. Dual core
 - D. Quad core

220-701 A+ Objective 1.5, “Explain cooling methods and devices”

50. Which of the following is a heat sink carrying an electrical charge that causes it to act as an electrical thermal transfer device?
- A. Liquid cooling system
 - B. Peltier
 - C. Water cooler
 - D. Fan

220-701 A+ Objective 1.5, “Explain cooling methods and devices”

51. What is the most popular method of cooling overclocked processors?
- A. Liquid cooling system
 - B. Peltier
 - C. Water cooler
 - D. Fan
- 220-701 A+ Objective 1.5, “Explain cooling methods and devices”
52. Which of the following has one notch and uses 184 pins? Instead of processing data for each beat of the system clock, it processes data when the beat rises and again when it falls, doubling the data rate of memory.
- A. SIMM
 - B. ROM
 - C. DDR
 - D. SDRAM
- 220-701 A+ Objective 1.6, “Compare and contrast memory types, characteristics, and their purpose”
53. What comes in two sizes for personal computers: the 2.5-inch size used for laptop computers, and the 3.5-inch size used for desktops?
- A. Host adapter
 - B. Hard drive
 - C. RAID
 - D. Floppy disc drive
- 220-701 A+ Objective 1.1, “Categorize storage devices and backup media”
54. What has one, two, or more platters, or disks, that stack together and spin in unison inside a sealed metal housing that contains firmware to control reading and writing data to the drive and to communicate with the motherboard?
- A. Terminating resistor
 - B. Host adapter
 - C. Magnetic hard drive
 - D. Actuator
- 220-701 A+ Objective 1.1, “Categorize storage devices and backup media”
55. Inside a hard drive, all the read/write heads are controlled by which of the following?
- A. Inverter
 - B. Capacitor
 - C. Magnetic hard drive
 - D. Actuator
- 220-701 A+ Objective 1.1, “Categorize storage devices and backup media”

56. What term is used to describe each side, or surface, of one hard drive platter?
- A. Head
 - B. Face
 - C. Arm
 - D. Actuator
- 220-701 A+ Objective 1.1, “Categorize storage devices and backup media”
57. What interface standard defines how hard drives and other drives such as CD, DVD, tape, and Blu-ray drives interface with a computer system?
- A. DMA
 - B. ATA
 - C. ANSI
 - D. S.M.A.R.T.
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
58. What system BIOS feature monitors hard drive performance, disk spin up time, temperature, distance between the head and the disk, and other mechanical activities of the drive to predict when the drive is likely to fail?
- A. DMA
 - B. ATA
 - C. S.M.A.R.T
 - D. ANSI
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
59. What standard allows for one or two IDE connectors on a motherboard, each using a 40-pin data cable?
- A. ANSI
 - B. Parallel ATA
 - C. ATAPI
 - D. IEEE
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
60. Which statement is false?
- A. The 80-conductor IDE cable has 40 pins and 40 wires.
 - B. An EIDE drive such as a CD or DVD drive must follow the ATAPI (Advanced Technology Attachment Packet Interface) standard to connect to a system using an IDE connector.
 - C. There are five PIO modes used by hard drives.
 - D. All motherboards today support Ultra DMA.
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”

61. What transfers data directly from the drive to memory without involving the CPU?
- A. ANSI
 - B. SATA
 - C. PIO
 - D. DMA
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
62. Which statement is false?
- A. SATA uses a serial data path rather than the traditional parallel data path.
 - B. PATA interfaces are much faster than Serial ATA interfaces and are used by all types of drives, including hard drives, CD, DVD, Blu-ray, and tape drives.
 - C. A motherboard can have two, four, six, or more SATA connectors.
 - D. SATA supports hot-swapping.
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
63. What is up to six times faster than USB or FireWire?
- A. PATA
 - B. SATA
 - C. eSATA
 - D. ATA
- 220-701 A+ Objective 1.2, “Explain motherboard components, types, and features”
64. If a motherboard does not have an embedded SCSI controller, what term is used to describe the gateway from the SCSI bus to the system bus?
- A. Hybrid hard drive
 - B. Magnetic hard drive
 - C. SCSI host adapter card
 - D. Boot sector
- 220-701 A+ Objective 1.9, “Summarize the function and types of adapter cards”
65. Which of the following can support both internal and external SCSI devices, using one connector on the card for a ribbon cable or round cable to connect to internal devices, and an external port that supports external devices?
- A. Head
 - B. Bus
 - C. Host adapter
 - D. Connector
- 220-701 A+ Objective 1.9, “Summarize the function and types of adapter cards”

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