

- **SSH client**
- Telnet client
- Windows Remote Desktop client
- Windows Remote Assistance client

Explanation: The Windows administrator should use Secure Shell (SSH) TCP port 22. SSH allows the administrator to connect remotely and securely to the Linux workstation in order to safely authenticate and then perform updates on the workstation.

30. A technician receives a call from a customer who is too talkative. How should the technician handle the call?

- Talk over the customer and quickly gather the necessary information to be of help.
- Use open-ended questions and repeat all the information back to the customer to politely show that unnecessary information is being given.
- **Allow the customer to speak without interruption and then try to use closed-ended questions to gather data.**
- Politely step in and gain control of the call by asking the customer social questions.

Explanation: If a customer is too talkative, the technician should not interrupt the customer but attempt to regain control of the call by asking closed ended questions after customer is through speaking.

IT Essentials 7.0 8.0 Practice Final Exam (Chapters 1-9) Answers Full

1. What is the function of the power supply?

- **to convert AC power into a lower voltage DC power**
- to convert AC power into a higher voltage DC power
- to convert DC power into a lower voltage AC power
- to convert DC power into a higher voltage AC power

Explanation: The power supply converts alternating current (AC) power coming from a wall outlet into direct current (DC) power, which is of lower voltage. DC power is required for all the components inside the computer.

2. Which two motherboard components connect to the Northbridge chipset? (Choose two.)

- NIC
- USB 2.0 devices
- USB 3.0 devices
- FireWire devices
- **RAM**
- **video card**

Explanation: The Northbridge chipset allows the fastest components to interface with the CPU at the front side bus speed, namely the RAM and video card. All other components like the USB, FireWire, and the expansion buses communicate with the CPU via the Southbridge chipset.

3. What type of connector can be used to connect an internal hard drive to the motherboard?

- USB
- **SATA**
- eSATA
- Thunderbolt

Explanation: A SATA interface uses a 7-pin data connector and connects an internal SATA hard drive to the motherboard.

4. Refer to the exhibit. To what input device would the cables attach?



ITE v7.0 – IT Essentials (Version 7.0) – IT Essentials 7.0 Practice Final Exam Answers

- keyboard/mouse combo device
- **KVM switch**
- video distribution center
- sound system

Explanation: A KVM switch is commonly used to connect one mouse, keyboard, and monitor to multiple computers.

5. Which is the correct procedure to put out a fire with a fire extinguisher after the pin is pulled?

- Aim just above the flame, squeeze the lever, and sweep from side to side.
- **Aim at the base of the flame, squeeze the lever, and sweep from side to side.**
- Aim directly at the center of the flame, squeeze the lever, and sweep from side to side.
- Aim at the base of the flame, squeeze the lever, and sweep from the base to the top of the flame.
- Aim just above the flame, squeeze the lever, and sweep from the top to the base of the flame.

Explanation: Anyone using a fire extinguisher should remember the basic rules of operation: P – Pull the pin. A – Aim at the base of the fire, not at the flames. S – Squeeze the lever. S – Sweep the nozzle from side to side.

6. Which three safety guidelines would be recommended for a technician working inside a laser printer? (Choose three.)

- **Allow the hot area of the laser printer to cool.**
- Ensure that the printer has power attached and that there is a good ground.
- Keep a fire extinguisher beside the laser printer while working inside it.
- **Remove jewelry and other accessories.**
- **Secure loose clothing.**
- When removing the printer or heavy parts of the printer, be sure to bend at the waist to lift.

Explanation: Safety procedures that would apply specifically to laser printer repair would include the following: Allow the hot areas of the laser printer to cool. Remove a watch, jewelry, and other accessories. Secure loose clothing. Turn off the power, and unplug. Do not touch high voltage areas. Know where the fire extinguisher is located and how to use it. When lifting heavy printers or parts, bend at the knees to lift. A fire extinguisher is important to have in a room where computers and peripherals are located, but the fire extinguisher does not have to be located beside the printer when a repair is being performed.

7. A technician is reorganizing the parts cabinet and has found some thermal paste. When would the technician use thermal paste?

- when installing SSDs
- when performing maintenance on mechanical drives
- **when installing CPUs**
- when troubleshooting memory problems

Explanation: Thermal paste is used between the CPU and a cooling object such as a heatsink or fan.

8. Which two types of expansion slots would be used by a wireless NIC in a computer today? (Choose two.)

- **PCIe**
- AGP
- **PCI**
- DIMM
- ISA

Explanation: Wireless NICs use PCI and PCIe expansion slots on the motherboard. AGP is for a video card, ISA is an obsolete expansion slot type, and DIMM slots hold RAM modules.

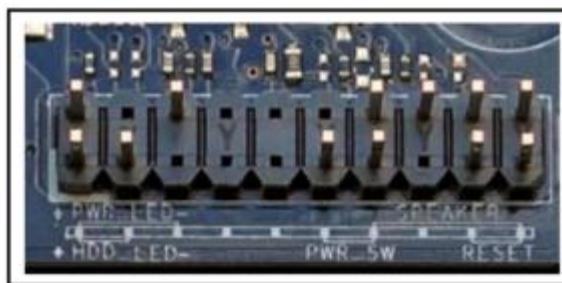
9. Refer to the exhibit. What is the purpose of the device that is shown?



- to connect multiple computers to a single keyboard and mouse
- **to read data from a memory card**
- to read or write data to discs
- to connect various types of external hard drives

Explanation: A media reader can be an external USB-attached device or an internal device that is used to read or write to media cards.

10. Refer to the exhibit. What is the motherboard component that is shown?



- **front panel cable connectors**
- motherboard power connector
- PATA drive connector
- SATA data and power connectors

Explanation: The front panel power connectors are used to connect a cable to the front panel power button, reset button, power LED, and drive activity LEDs.

11. Which solid-state storage technology allows a computer BIOS to be upgraded by flashing?

- SODIMM
- ROM
- SDRAM
- **EEPROM**

Explanation: Electrically erasable programmable read-only memory (EEPROM) is non-volatile memory that can store the computer BIOS and can be upgraded by flashing its contents. ROM is a general term for read-only memory, and SDRAM and SODIMM are types of computer volatile memory.

12. Which two PC settings can be configured using the BIOS setup utility? (Choose two.)

- POST
- **virtualization support**

- allocation of memory to applications
- enabling device drivers
- **boot sequence**

Explanation: The computer boot sequence and support for virtualization can be configured from within BIOS. The computer operating system typically allocates memory to applications and enables device drivers. POST is typically not configurable.

13. What type of device provides power to a computer and allows it to be safely shut down in the event of a power loss?

- surge suppressor
- **uninterruptible power supply**
- standby power supply
- power inverter

Explanation: An uninterruptible power supply or UPS contains a battery backup that provides consistent power through brownouts and blackouts until the battery power is emptied. Many UPS systems can safely shut down a computer prior to the loss of battery power.

14. Why do laptop computers use CPU throttling techniques?

- to enhance the performance of the CPU
- **to reduce the heat that the CPU may generate**
- to ensure the CPU is running at its peak speed
- to conserve the battery life by reducing the bus speed between the CPU and RAM

Explanation: CPU throttling is used to conserve power and increase battery life on portable devices. Throttling also produces less heat.

15. Which two existing components must be compatible with the installation of a new upgraded CPU? (Choose two.)

- **power supply**
- **motherboard**
- hard drive
- case
- video card

Explanation: The CPU that is installed into a PC must be compatible with the motherboard, chipset, and power supply.

16. What are three important considerations when installing a CPU on a motherboard that has just been upgraded? (Choose three.)

- **Antistatic precautions are taken.**
- **The CPU is correctly aligned and placed in the socket.**
- The CPU contacts are first cleaned with isopropyl alcohol.
- **The CPU heat sink/fan assembly is correctly installed.**
- The CMOS battery is removed prior to installing the CPU.
- Maximum insertion force is applied to the load lever so that the CPU is locked in place.

Explanation: Three important considerations to be taken when installing the motherboard are (1) antistatic precautions, (2) CPU pins are aligned correctly with the socket, and (3) the heat sink/fan assembly is installed correctly. The load lever should easily be locked into place when the CPU is assigned with the socket.

17. What is a possible use for virtual computing?

- **to run old applications that are not compatible with current operating systems**
- to allow computer hardware to be tested
- to allow computer hardware upgrades to be tested
- to allow ROM firmware upgrades to be tested

Explanation: Virtual environments are often used to test software and software upgrades, use multiple operating systems on a single hardware platform, and to run older applications that cannot run in modern operating systems.

18. A customer has requested a device with a minimum of 64 GB of RAM and the requirement that large numbers of users can test software upgrades in a safe environment. What type of device should be purchased?

- CAx workstation
- **VDI server**
- thin client
- thick client

Explanation: With a VDI server, two or more operating systems can be simultaneously running on a single device. This requires a high amount of RAM and CPU cores. A CAx workstation is used to design products or control a manufacturing process. A thick client is a standard computer that performs all processing locally. A thin client is a computer that will rely on remote servers for all data processing.

19. True or False?

Thin clients require a network connection to remote servers to perform data processing.

- **true**
- false

Explanation: Thin clients are typically low-end computers that require network access to a server for data processing and storage.

20. What is the correct disposal process of old computer batteries?

- They should be burned because they do not decompose.
- They can be refilled and reused.
- They should be placed in an airtight container and then thrown away in the regular garbage.
- **They must be recycled because they are harmful to the environment.**
- Because they will decompose harmlessly, they should be thrown away in the recycling bin.

Explanation: Batteries of any kind contain chemicals and metals that are very harmful to humans and the environment. They should be recycled based on local recycling regulations. Batteries should never be burned, placed in the regular garbage, or placed in compost bins.

21. Which component can be easily damaged by the direct spray of compressed air when cleaning inside the computer case?

- **fan**
- heat sink
- power supply
- CPU
- cable connectors

Explanation: When you clean the inside of the computer, hold the fan blades in place. This prevents over-spinning the rotor or moving the fan in the wrong direction.

22. During the process of testing a theory of several probable causes to a problem, which should be tested first?

- **the easiest and most obvious**
- those the customer believes to be the most important
- the most complex and difficult to diagnose
- those chosen by random selection

Explanation: Even though the customer may think that there is a major problem, start with the obvious issues before moving to more complex diagnoses.

23. Which two items could be used to help establish a plan of action when resolving a computer problem? (Choose two.)

- a multimeter
- a loopback plug
- **the computer manual**
- **the computer repair history log**
- BIOS diagnostics

Explanation: During the six steps of troubleshooting, once the cause of the problem is determined, the “establish a plan of action to resolve the problem and implement the solution” step is where a technician has to do more research by searching the Internet, talking to another technician, reviewing the history logs, manuals, forums, etc.

24. What is the preferred method to remove a disc from an optical drive that fails to eject the disc?

- **Insert a pin into the small hole on the front of the drive.**
- Use a small screwdriver and pry the drive door open.
- Remove the top of the drive enclosure.
- Send the drive to an authorized repair depot.

Explanation: If a computer will not eject the optical disc, to open the tray you can insert a pin in the small hole next to the eject button on the drive.

25. A technician is called to an office where the computer is randomly rebooting. Which of the given components would most likely cause this issue?

- BIOS
- CMOS battery
- optical drive
- **power supply**

Explanation: A failing power supply could cause a computer to reboot or to emit a smell of burning electronics.

26. Which two devices are considered intermediary devices in a network?

(Choose two.)

- **switch**
- server
- printer
- **modem**
- IP phone

Explanation: Servers, printers, and IP phones are end devices in a network.

27. What are the four layers in the TCP/IP reference model?

- application, presentation, internet, network access
- application, transport, network, data link
- **application, transport, internet, network access**
- application, presentation, session, transport
- physical, data link, network, transport

Explanation: The TCP/IP model has four layers. Each layer has specific functions to prepare data for data transmission. The four layers from top to bottom are application, transport, internet, and network access.

28. Several messages sent to the network administrator are reporting that access to a secure server using HTTPS is failing. After checking recent updates to the company firewall, the administrator learns that the firewall is blocking HTTPS. Which port should be opened to solve the problem?

- 22
- 53
- 80
- 143
- **443**

29. A computer technician is monitoring traffic on a network where users are complaining about slow network performance. The technician is curious as to whether the new network management software is causing the slowdown. Which two port numbers would the technician be looking for in the captured packets for SNMP traffic? (Choose two.)

- 67
- 68
- 80
- **161**

- **162**
- 443

Explanation: SNMP uses UDP ports 161 and 162.

30. A technician has been asked to assist with the installation of smart devices in school dormitories. Which two technologies should the technician be familiar with? (Choose two.)

- VR/AR
- LTE
- IPS
- **Z-Wave**
- **Zigbee**

Explanation: Smart devices used in homes and dormitories commonly use a wireless mesh topology. Two popular standards used with smart devices are Zigbee and Z-Wave.

31. The current IP configuration of a medium size company with several subnets is done manually and is time-consuming. Because of increased network growth, a technician needs a simpler way for IP configuration of workstations. Which service or protocol would simplify the workstation IP configuration task?

- APIPA
- **DHCP**
- DNS
- ICMP

32. Which IPv6 address represents the most compressed form of the IPv6 address **2001:0db8:cafe:0100:0f0d:0000:0000:00AA/96**

- 2001:0db8:cafe:0100:0f0d::00AA/96
- 2001:db8:cafe:1:f0d::AA/96
- **2001:db8:cafe:100:f0d::AA/96**
- 2001:0db8:cafe:0100:0f0d::AA/96

Explanation: There are two rules that exist to help in the reduction of the number of digits within an IPv6 address: Rule 1 is used to remove any leading 0s. After applying rule 1 to 2001:0db8:cafe:0100:0f0d:0000:0000:00AA/96, we calculate the outcome as 2001:db8:cafe:100:f0d:0:0:AA/96 Rule 2 is used to replace any group of consecutive zeros once throughout the IPv6 address. After applying rule 2 to 2001:db8:cafe:100:f0d:0:0:AA/96, we calculate the outcome as 2001:db8:cafe:100:f0d::AA/96

32. What is the full decompressed form of the IPv6 address

2001:420:59:0:1::a/64?

- 2001:420:59:0:1:0:0:a
- **2001:0420:0059:0000:0001:0000:0000:000a**
- 2001:4200:5900:0000:1000:0000:0000:a000
- 2001:4200:5900:0:1:0:0:a000
- 2001:0420:0059:0000:0001:000a
- 2001:0420:0059:0000:0001:0000:000a

Explanation: To decompress an IPv6 address, the two rules of compression must be reversed. Any 16-bit hexet that has less than four hex characters is missing the leading zeros that were removed. An IPv6 address should have a total of 8 groups of 16-bit hexets, a (:) can be replaced with consecutive zeros that were removed.

33. A support desk technician is asking a customer a series of questions about a problem connecting to the network. Which step of the troubleshooting process is the technician applying?

- **Identify the problem.**
- Establish a theory of probable cause.
- Establish a plan of action to resolve the problem.
- Test the theory to determine cause.

Explanation: Before any solutions can be proposed or tested, the problem must first be identified. This is done by gathering information from the customer by asking questions and clarifying details of the problem.

34. What are three common solutions for a PC that displays an IP address starting with 169.254.x.x? (Choose three.)

- Check the DNS server setting.
- **Turn on the device that is acting as a DHCP server.**
- Enable the client machine to receive an IPv4 address automatically.
- **Use the ipconfig /release and ipconfig /renew commands to request a new IPv4 address.**
- **Reboot the client machine that is using the 169.254.x.x address.**
- Reenter the IPv4 address on the DHCP server.

Explanation: Typical solutions for a client machine not receiving a DHCP IPv4 address are as follows:

- Turn on the DHCP server.
- Use the ipconfig /release then the ipconfig /renew command on the client machine.
- Reboot the client machine.

35. A user with a laptop is trying to connect to a wireless network, but no wireless networks are showing. What is a quick way for the user to ensure that the wireless NIC is enabled?

- Enable Airplane mode.
- **Use a function key.**
- Hold down the Ctrl key and then press the Insert key.
- Attach the AC power cord.

Explanation: Function keys can be used to change the video output to an external port, enable/disable the Wi-Fi adapter, change screen brightness, and adjust the sound level.

36. Which laptop device would accept an SD card?

- M.2 card
- mini-PCIe adapter
- **card reader**

- eSATA port

Explanation: A card reader accepts multiple sizes of flash media such as an SD card.

37. What are two indications that a mobile device battery needs to be replaced? (Choose two.)

- **The battery is leaking.**
- The mobile device will not turn off properly.
- Unusual characters display on the screen.
- **The battery overheats.**
- The display brightness cannot be adjusted.

Explanation: When a mobile device battery will not hold a charge, overheats, or leaks, it should be replaced with a compatible replacement part.

38. What two steps must be taken before performing a cleaning procedure on a laptop computer? (Choose two.)

- **Disconnect the laptop from the electrical outlet.**
- **Remove all installed batteries.**
- Wipe the surface of the touch pad.
- Clean the screen with a cloth.
- Insert the cleaning disk into the optical drive.
- Backup the registry.

Explanation: To avoid electrical hazards or accidents, it is essential to remove any power source before cleaning any component.

39. A tire store needs to use carbon copy paper to print customer invoices so that both the store and the customer have a copy. What is the best printer solution?

- piezoelectric printer
- inkjet printer
- thermal printer
- **impact printer**

Explanation: The most common type of impact printer is a dot matrix printer. Dot matrix printers can use continuous feed or carbon-copy paper.

40. In what two situations is a virtual printer used? (Choose two.)

- **A user sends a printed document to a remote destination through the cloud.**
- A remote user sends a document to a local user who prints the document using the company laser printer.
- A corporate user prints to a centralized printer on the same floor, but on a different network.
- **A document is printed to a PDF or other file type.**
- A document is sent to a printer that is connected to the USB port of a co-worker on the same network.

Explanation: Virtual printing sends the print job to a file or to a remote destination.

41. What printer feature allows a computer to work while print jobs are waiting in queue to be printed?

- buffering
- duplexing
- charging
- processing

Explanation: Print job buffering uses internal printer memory to store print jobs while the computer that sent the print job continues with other tasks. Duplexing is the feature of a printer to print on both sides of the paper. Charging is a laser printer process that charges the print drum with DC voltage. Processing is the process of converting data into a printable form.

42. A user on a home network wants to share a printer from a Windows 7 computer. What must the user do in order for other Windows 7 computers in the house to obtain the proper driver?

- The user must browse the Internet, then download and install the proper driver.
- The person doing the sharing must use the Additional Drivers button in order to designate how many device drivers are allowed to be downloaded.
- **Nothing. Windows automatically provides the driver.**
- The person doing the sharing must use the Additional Drivers button in order to designate the driver to be used by the other Windows 7 computers.

Explanation: Windows automatically downloads the driver to users who are accessing the shared printer and have the same version of Windows. The Additional Drivers button can be used to select other operating systems.

43. For cleaning a laser printer, what should be used to pick up excess particles of toner?

- **a HEPA-capable vacuum**
- a lint-free cloth
- isopropyl alcohol
- a damp cloth

Explanation: The toner used in a laser printer consists of microscopic particles. To effectively pick up these particles, it is recommended that a vacuum capable of High Efficiency Particulate Air (HEPA) filtration be used.

44. What is the difference between cloud computing and a data center?

- A data center provides access to shared computing resources, whereas a cloud is a private on-premise facility that stores and processes local data.
- **Cloud computing solutions are network resources and services provided to the clients through the use of services from data centers.**
- The data center makes use of more devices to process data.

- Data centers require cloud computing but cloud computing does not require data centers.

Explanation: Cloud service providers use one or more data centers for services and resources such as data storage. A data center is a data storage facility located inside the company and maintained by the IT staff or leased from a co-location provider where the maintenance can be done by the provider or the corporate IT staff.

45. Which technology provides a solution for PC virtualization?

- **hypervisor**
- server clustering
- Terminal Services
- RAID

Explanation: Microsoft provides software, Virtual PC, which is a type of hypervisor that creates and manages virtual machines on a host computer.

46. What is an example of cloud computing?

- a continuous interaction between people, processes, data, and things
- **a service that offers on-demand access to shared resources**
- a network infrastructure that spans a large geographic area
- an architectural style of the World Wide Web

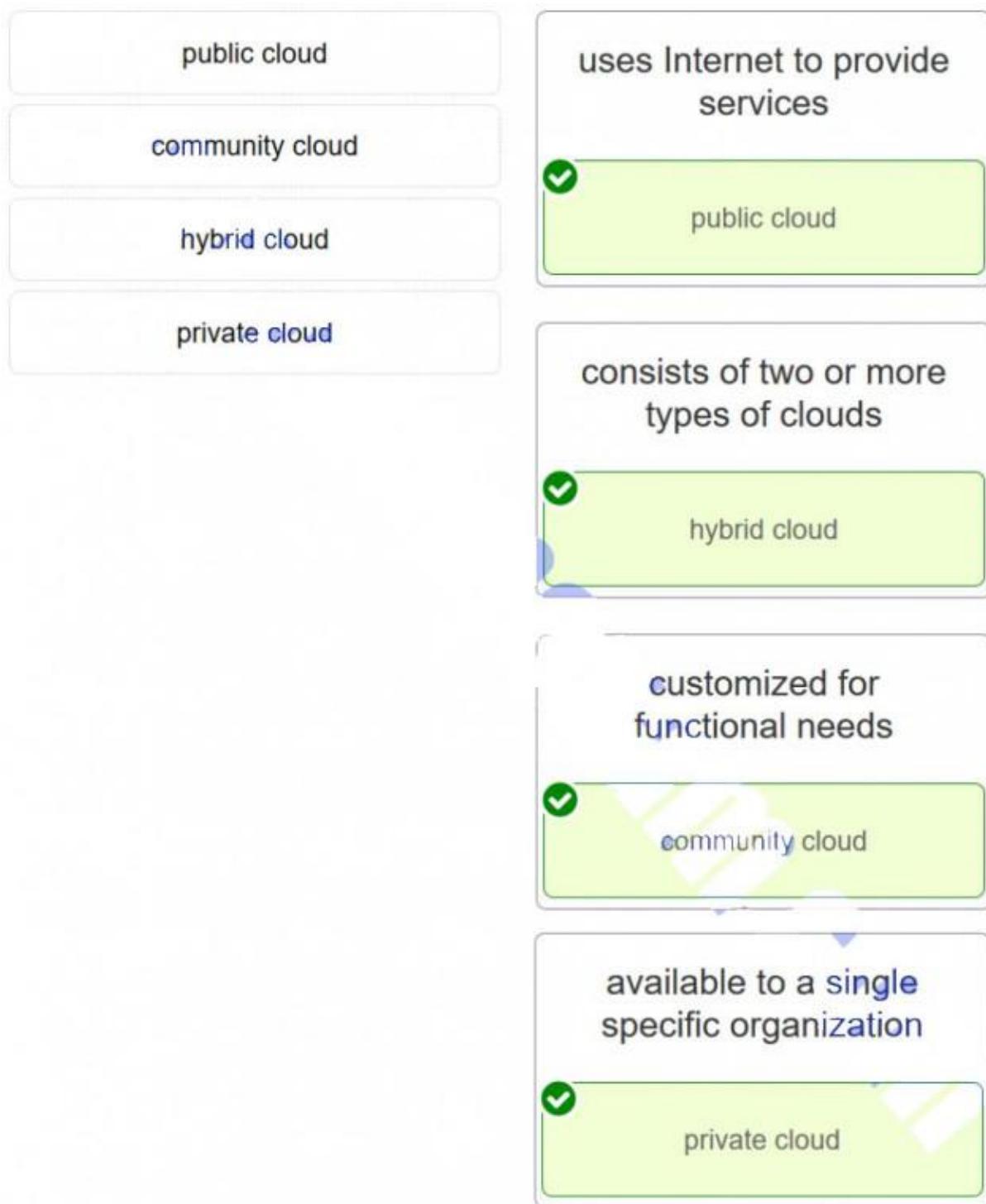
Explanation: Cloud computing provides on-demand access to shared resources. With minimal management effort, resources can be deployed quickly at data centers.

47. Which Cloud computing service would be best for a new organization that cannot afford physical servers and networking equipment and must purchase network services on-demand?

- PaaS
- SaaS
- ITaaS
- **IaaS**

Explanation: Infrastructure as a service (IaaS) provides an environment where users have an on-demand infrastructure that they can install any platform as needed.

48. Match the cloud model with the description.



IT Essentials (Version 7.00) – IT Essentials 7.0 Practice Final 1 – 9

49. A customer comes into a computer parts and service store. The customer is looking for a device to allow users to tap and pay for their purchases. What device should the store owner recommend to accomplish the required task?

- **NFC device**
- keyboard
- flatbed scanner
- barcode scanner

50. A customer comes into a computer parts and service store. The customer is looking for a device to allow secure access to the main doors of the company by swiping an ID card. What device should the store owner recommend to accomplish the required task?

- **magstripe reader**
- keyboard
- NFC device
- flatbed scanner

51. A customer comes into a computer parts and service store. The customer is looking for a device to scan some old family photos into a laptop. What device should the store owner recommend to accomplish the required task?

- **flatbed scanner**
- keyboard
- NFC device
- barcode scanner

52. A customer comes into a computer parts and service store. The customer is looking for a device to display a promotional presentation to a large audience at a conference. What device should the store owner recommend to accomplish the required task?

- **projector**
- keyboard
- NFC device
- flatbed scanner

53. A customer comes into a computer parts and service store. The customer is looking for a device to simplify inventory ordering and control in the customer retail store. What device should the store owner recommend to accomplish the required task?

- **barcode scanner**
- stylus
- AR headset
- KVM switch

54. A customer comes into a computer parts and service store. The customer is looking for a device to train pilots how to land and take off in a computer simulation environment. What device should the store owner recommend to accomplish the required task?

- **joystick or gamepad**
- KVM switch
- stylus
- barcode scanner

55. A customer comes into a computer parts and service store. The customer is looking for a device to share a keyboard and mouse between two computers. What device should the store owner recommend to accomplish the required task?

- **KVM switch**
- stylus

- AR headset
- barcode scanner

56. A customer comes into a computer parts and service store. The customer is looking for a device to verify the identity of the receiver when a purchased product is delivered by courier to the door of a customer. What device should the store owner recommend to accomplish the required task?

- **signature pad**
- stylus
- AR headset
- KVM switch

57. A customer comes into a computer parts and service store. The customer is looking for a device to provide secure access to the central server room using a retinal scan. What device should the store owner recommend to accomplish the required task?

- **biometric scanner**
- stylus
- AR headset
- KVM switch

58. A customer comes into a computer parts and service store. The customer is looking for a device to help a person with accessibility issues input instructions into a laptop by using a pen. What device should the store owner recommend to accomplish the required task?

- **stylus**
- KVM switch
- AR headset
- barcode scanner

59. A consultant has been asked to help decide on the best power protection for some equipment in a company that trades electricity and energy nationwide. The company has multiple cubicles where the energy traders work. Each cubicle has a computer, an IP phone, and eight monitors. All devices need power and the ability to protect the equipment from power spikes. Which protection device would be best to use for each computer station?

- **a surge protector**
- a capacitor
- a phone line filter
- a redundant power supply

60. A consultant has been asked to help decide on the best power protection for some equipment in a company that provides payroll services to small businesses. The company has staff that require a PC, laser printer, and IP phone from 8 a.m. to 5 p.m. Monday through Friday. The power protection device needs to be able to provide protection for an overvoltage situation. Which protection device would be best to use for each computer station?

- **a surge protector**
- a capacitor
- a phone line filter
- a redundant power supply

61. A consultant has been asked to help decide on the best power protection for some equipment in a company that specializes in PC technical support for senior citizens. The company is a 24/7 operation. Each technician is assigned to a computer that has an IP phone with a headset and two monitors. All devices need power and the ability to protect the equipment from power spikes. Which protection device would be best to use for each computer station?

- **a surge protector**
- a 24-pin power connector
- a capacitor
- a redundant power supply

62. A consultant has been asked to help decide on the best power protection for some equipment in a company that trades electricity and energy nationwide. The company has multiple cubicles where the energy traders work. Each cubicle has a computer, an IP phone, and eight monitors. All devices need consistent quality power, the ability to use the equipment 24/7, and the ability to save information about the current transaction if the power goes out. Which protection device would be best to use for each computer station?

- **a UPS**
- an anti-static wrist band
- a capacitor
- a redundant power supply

63. A consultant has been asked to help decide on the best power protection for some equipment in a company that provides payroll services to small businesses. The company has staff that require a PC, laser printer, and IP phone from 8 a.m. to 5 p.m. Monday through Friday. The power protection device needs to be able to provide conditioned power at all times the ability to save payroll information if the power goes out. Which protection device would be best to use for each computer station?

- **a UPS**
- an anti-static wrist band
- a capacitor
- a redundant power supply

64. A consultant has been asked to help decide on the best power protection for some equipment in a company that specializes in PC technical support for senior citizens. The company is a 24/7 operation. Each technician is assigned to a computer that has an IP phone with a headset and two monitors. All devices need quality power, the ability to finish the current call if the power goes out, and constant battery charging. Which protection device would be best to use for each computer station?

- **a UPS**
- a lightning arrestor
- a 24-pin power connector
- a capacitor

65. A user is building a new computer system. Why would the user select a DDR3?

- **to install a memory module**
- to diminish any electrostatic charge
- to configure a gaming console
- to attach an external HD

66. A user is building a new computer system. Why would the user select external screws?

- **to install a power supply into a PC tower case**
- to attach an external HD
- to attach a VR headset
- to install an EEPROM

67. A user is building a new computer system. Why would the user select a part that has a 3.5 inch (8.89 cms) form factor?

- **to install an internal HDD**
- to configure a gaming console
- to attach a VR headset
- to install an EEPROM

68. A user is building a new computer system. Why would the user select an HDMI cable?

- **to attach a digital monitor**
- to configure a gaming console
- to attach a VR headset
- to install an EEPROM

69. A user is building a new computer system. Why would the user select a DVI cable?

- **to attach a digital monitor**
- to replace the CPU cooling system
- to attach a VR headset
- to install an EEPROM

70. A user is building a new computer system. Why would the user select a media reader?

- **to copy files from an SD card**
- to attach a laser printer
- to install an EEPROM
- to replace a heatsink

71. A user is building a new computer system. Why would the user select an RJ-45 connector?

- **to connect a device to a wired network**
- to attach a laser printer
- to install an EEPROM
- to replace a heatsink

72. How many bits are used to represent the host address of a computer with the IP address of 192.168.1.25 and a subnet mask of 255.255.255.0?

- 8
- 32

- 128
- 4

73. How many bits are used to represent the network address of a host with an IP address of 192.168.150.16 and a subnet mask of 255.255.0.0?

- **16**
- 32
- 128
- 4

74. How many bits are used to represent a MAC address?

- **48**
- 128
- 8
- 64

75. How many bits are used to represent an IPv4 address?

- **32**
- 48
- 128
- 132

76. How many bits are used to represent an IPv6 address?

- **128**
- 48
- 32
- 12

77. How many bits are used to represent the OUI part of the MAC address of a NIC card?

- **24**
- 8
- 128
- 42

78. A computer user logs a problem stating that the computer is emitting a loud clicking noise. Which device should the technician check first?

- **hard drive**
- CPU
- RAM
- CPU fan

79. While a technician is installing a printer, the technician hears a loud clicking noise. Which device should the technician check first?

- **hard drive**
- RAM
- CPU
- motherboard

80. While working in a computer training room, the technician notices that one computer emits a loud clicking noise. Which device should the technician check first?

- **hard drive**
- sound card

- CPU fan
- motherboard

Explanation: If a hard drive makes repeated clicking or tapping sounds when the computer is idle, the hard drive is failing. Make a backup and replace the drive as soon as possible. Invalid boot disk errors and files that suddenly will not open are symptoms of hard drive issues.

81. Every time a user turns on the computer in the morning, the user hears a loud clicking noise. Which device should the technician check first?

- **hard drive**
- internal speaker
- CPU fan
- motherboard

82. When a co-worker steps into another office, the co-worker notices that the computer is making a loud clicking noise and asks about it. The technician is contacted to investigate. Which device should the technician check first?

- **hard drive**
- monitor
- CPU
- CPU fan

83. When a user turns on a workstation, the screen displays an “Invalid Boot Disk” error. The user calls the help desk. Which device should the technician check first?

- **hard drive**
- power supply
- sound card
- internal speaker

84. A technician is working on a laptop and an app is not loading. What is a possible solution for this situation?

- **Perform a reset.**
- Ensure that only one app is open at a time.
- Check the display settings.
- Check the screen refresh rate.

85. A technician is working on a laptop and an app is not responding. What is a possible solution for this situation?

- **Perform a reset.**
- Recharge the battery.
- Check the screen refresh rate.
- Replace the digitizer.

86. A technician is working on a laptop and an error message about decryption appears when opening an email. What is a possible solution for this situation?

- **Install an appropriate certificate.**
- Check the display settings.
- Check the screen refresh rate.

- Replace the digitizer.

87. A technician is working on a laptop and a key on the keyboard is not responding as it should. What is a possible solution for this situation?

- **Clean with compressed air.**
- Update all security apps.
- Recharge the battery.
- Verify that the Num Lock key is not depressed.

88. A technician is working on a laptop and the GPS is not functioning. What is a probable cause for this situation?

- **A service is disabled.**
- Bluetooth is activated.
- The display setting is incorrect.
- The battery is low.

89. What is the purpose of a network load balancer?

- to route data between different networks
- **to prevent network timeouts and slow server responses**
- to ensure that each server is deployed in a different network
- to manage network DNS and DHCP services

Explanation: Some network servers can experience very heavy loads. Some examples include streaming media servers, web servers, and email servers. Often, multiple servers are providing one service in order to provide timely content. A load balancer can be used to distribute the demand of requests. It is placed in front of the servers to ensure each server is being used as much as the others. This prevents things like network timeouts and slow responses.

90. What is the purpose of an OLT in a fiber network?

- This is the splitter in the street cabinet that has connections for each customer being supplied in the area.
- It brings the fiber to the curb.
- It brings the fiber to the customer building.
- **This is located inside the customer premises and interconnects the external optical network to the internal router.**

Explanation: The network switches back to copper coaxial cable at a user's home. This is known as fiber to the curb (FTTC). Fiber to the premises (FTTP) brings the fiber to the customer's building. A splitter in the street cabinet has an optical line terminal (OLT). The OLT has connections for each customer in the area. The building connects to the optical network terminal (ONT) inside the customer's building. The optical signals are converted to electrical signals and connected to a router using a standard Ethernet patch cord.

91. A school is installing a new shared printer but the printer is not showing up on the list of available printers. What should the technician do to resolve the issue?

- **Manually add the printer IP address.**
- Reset the page counter.
- Install a USB hub.
- Connect the printer using wireless.

- Update the BIOS.

92. A Windows 10 computer has several printers configured in the Control Panel Devices and Printers window. Which printer will the computer choose to be the first option for printing?

- a manual selection, which is always needed
- the software-based printer that is used to create XPS files
- **the printer that is set as the default printer**
- the software-based printer that is used to create PDF files

Explanation: The Default Printer option is set globally and will be the first printer to print a job unless another printer is selected in a Per-Dокумент manner. Software-based printers are just instances of different kinds of printers, but to be chosen to do the job, they will need to be selected as a default or Per-Dокумент printer. Selecting a printer every time a printing job sends is not needed.

93. What is the purpose of the Server Message Block (SMB) protocol on Windows networks?

- **file sharing**
- web browsing
- desktop management
- email services

Explanation: SMB is the protocol used for file and printer sharing on Windows networks. Email services use POP3, SMTP, and IMAP protocols. Web browsing uses HTTP and HTTPS protocols. Desktop management and appearance is configured using Windows Settings tools.

94. A user on a home network wants to share a printer from a Windows 10 computer. What must the user do in order for other Windows 10 computers in the house to obtain the proper driver?

- The person doing the sharing must use the Additional Drivers button in order to designate how many device drivers are allowed to be downloaded.
- **Nothing. Windows automatically provides the driver.**
- The person doing the sharing must use the Additional Drivers button in order to designate the driver to be used by the other Windows 10 computers.
- The user must browse the Internet, then download and install the proper driver.

Explanation: Windows automatically downloads the driver to users who are accessing the shared printer and have the same version of Windows. The Additional Drivers button can be used to select other operating systems.

95. What are two probable causes of a VoIP implementation experiencing dropouts, echoes, or glitches? (Choose two.)

- high cable voltage
- **high latency**
- high bandwidth

- high cable impedance
- **high jitter**

Explanation: VoIP implementations are sensitive to high latency (excessive data transmission delay) and high jitter (excessive variation in delay), which can cause voice data to drop out, echo, or suffer other glitches that do not affect non-real-time data such as web or file transfer data. High bandwidth availability would typically enhance all data transmission. High cable voltage will most likely damage network devices and completely disrupt all data transmission. Similarly, high cable impedance will most likely disrupt all data transmission completely.

96. The SDN controller controls which layers in the SDN framework?

- the network access and transport layers
- the application and transport layers
- **the application and infrastructure layers**
- the internet and network access layers

Explanation: The SDN controller controls the application and infrastructure layers in the SDN framework. The application, transport, internet, and network access layers are layers in the TCP/IP networking model.

IT Essentials 7.0 8.0 Practice Final Exam (Chapters 10-14) Answers

1. What two motherboard components control the system boot operations? (Choose two.)

- **BIOS chip**
- **UEFI chip**
- Northbridge chip
- Southbridge chip
- CPU

2. What motherboard chip controls high speed CPU communication to RAM and the video card?

- **Northbridge**
- Southbridge
- BIOS
- UEFI

3. Which two procedures can help protect against ESD when working on a computer system? (Choose two.)

- **the use of an antistatic wrist strap**
- the use of magnetized tools
- **the use of an antistatic mat**
- the use of safety glasses
- the use of polyester clothing

4. Which software tool will protect against viruses and spyware on a Windows PC?

- Windows 8 Action Center
- Scandisk
- **Windows Defender**
- System File Checker

5. Which cleaning material should be used to clean component contacts?

- **isopropyl alcohol**
- compressed air
- cotton swabs and cloths
- dishwashing liquid and water

6. A technician is troubleshooting a problem where many websites return a “certificate not valid” error. The technician notices that the date and time are not current and resets these to the correct settings. The previously inaccessible websites are now accessible. However, when the computer is restarted the same problem reoccurs. What can the technician do to prevent the date and time from resetting?

- Reinstall the OS.
- Upgrade the BIOS.
- Change the power settings in the BIOS.
- **Replace the CMOS battery.**

7. When a new motherboard is being installed, between which two components must thermal compound be applied? (Choose two.)

- **CPU**
- RAM
- chassis
- **heat sink**
- chipset
- motherboard

8. A specific computer has an issue that could not be resolved by the help desk technician. The on-site technician finds that Windows updates have been disabled. The technician re-enables the update service, configures the computer for automatic updates, downloads and installs all missing updates, ensures the computer boots successfully, and verifies with the customer that the issue has been resolved. Which step, if any, is next?

- **Document the findings, actions, and outcomes.**
- No further action is needed.
- Establish a plan of action to resolve the problem and implement the solution.
- Verify full system functionality and, if applicable, implement preventive measures.
- Test the theory to determine the cause.

9. What should a technician do before beginning any troubleshooting steps on a customer computer?

- **Perform a data backup.**
- Document the findings.

- Identify the problem.
- Establish a plan of action.

10. Which document can be signed by both a user and a computer repair shop to release the shop from backing up user data?

- preventive maintenance plan
- work order
- **liability release form**
- warranty form

11. A technician is troubleshooting a 4-year-old computer that takes a long time to boot, and identifies that the BIOS rediscovers all the hardware at every boot. What action would fix this problem?

- **Replace the CMOS battery.**
- Launch Device Manager to discover new hardware.
- Reset the BIOS using the CMOS jumper.
- Start the computer with the last known good configuration.

12. Which location on a hard disk is used by the BIOS to search for operating system instructions in order to boot a PC?

- the logical drive
- **the active partition**
- the Windows partition
- the extended partition

Explanation: On a hard disk, up to four primary partitions can be created. Alternatively, up to three primary partitions plus an extended partition can be created, and the extended partition can further be divided into multiple logical drives, if desired. Only one primary partition can be made the active partition at any time. It is the active partition that is used by the operating system to boot a PC.

13. A technician is asked to set up one hard drive that will support two operating systems and will store data files in three separate drive locations. Which partition settings will support these requirements?

- 1 primary, 3 active, 1 extended, 2 logical
- 2 logical, 2 active, 3 extended
- **2 primary, 1 active, 1 extended, 3 logical**
- 3 primary, 1 active, 2 extended

Explanation: The primary partition that is marked active must carry the boot files for both the operating systems. In this case the data can be stored in the three logical drives created in the extended partition, leaving one extra primary drive for additional storage.

14. A user installs a new sound card driver in a computer that is working properly. After the installation of the drivers for the new sound card, the computer fails to boot. Which quick fix can the user implement to return to the previous working state?

- Boot to Emergency Recovery State.
- **Boot to Last Known Good Configuration.**
- Boot to Recovery Console.

- Boot to Start Windows Normally.

15. A technician uses the shrink volume feature of the disk management utility and splits the partition. What must the technician do next in order to make use of the new space?

- **Partition the unallocated space.**
- Format the existing partition.
- Delete all partitions and reinitialize the disk.
- Convert the unallocated space into a dynamic disk.

16. A technician is using the six troubleshooting steps in an attempt to repair a PC. After completing the steps needed to test a theory and determine the cause, the technician still has not solved the problem. Which two steps are likely to be taken next by the technician to establish a plan of action and resolve the problem? (Choose two.)

- **Perform an Internet search.**
- Ask other users in the area.
- **Access helpdesk repair logs.**
- Speak with the supervisor of the user.
- Call the helpdesk to log the problem.

17. On a computer that will not boot, which two actions are recommended in the troubleshooting process after verifying the obvious issues such as power to the computer and display, non-bootable media, and the BIOS boot order options? (Choose two.)

- **Remove unnecessary peripherals.**
- Reinstall the operating system.
- Reset the BIOS settings to factory default.
- **Use the Last Known Good Configuration.**
- Replace computer components one at a time until the problem is solved.
- Reinstall the user applications.

18. What is the distance limitation of a single data run for UTP cabling without adding networking devices?

- 33 ft (10 m)
- 100 ft (31 m)
- **330 ft (100 m)**
- 500 ft (154 m)

19. What is the default subnet mask for a Class A network?

- 0.0.0.255
- 0.0.255.255
- 0.255.255.255
- **255.0.0.0**
- 255.255.0.0
- 255.255.255.0

20. Which network protocol is used to automatically assign an IP address to a computer on a network?

- FTP
- **DHCP**

- ICMP
- SMTP
- APIPA

21. Which open standards-based wireless security mode supports the highest level of security?

- WEP
- **WPA2**
- WPA
- LEAP

22. What are two network requirements necessary to establish a VPN connection between a remote computer and a private company LAN?

(Choose two.)

- low latency network connection
- secure web server
- **Internet access**
- PSTN access
- **VPN client**

23. The corporate security policy states that all remote connections use only secure tunnels for data communications. Which encryption technique secures data traveling across the public Internet as if it were traveling across the corporate LAN?

- MD5
- **VPN**
- WEP
- WPA

24. What type of WAN connection would use 3G or 4G?

- DSL
- satellite
- cable
- POTS
- **cellular**

25. True or False?

An intrusion detection system works inline and has the ability to drop malicious traffic.

- true
- **false**

26. Where can a technician enable ACPI mode on a laptop?

- **BIOS**
- Task Manager
- Device Manager
- Personalization

27. Which two actions must be performed before installing RAM into a laptop? (Choose two.)

- Use thermal compound to attach the memory to the motherboard.
- Before installing the RAM, update the saved CMOS settings to the newly configured amount of RAM.

- **Remove the battery.**
- Disconnect the display from the bottom of the laptop.
- **Disconnect AC power.**
- Remove the memory module retaining clips from the slots where the new RAM will insert.

28. Which two items would be part of a laptop preventive maintenance kit? (Choose two.)

- **compressed air**
- plastic scribe
- **soft cloth**
- antistatic wrist strap
- flat-head screwdriver

29. What is the purpose of running mobile device apps in a sandbox?

- to enable the phone to run multiple operating systems
- **to prevent malicious programs from infecting the device**
- to enable separate app icons to be displayed on the home screen
- to bypass phone carrier restrictions that prevent access to unauthorized apps

30. A user has installed a new printer. Which two pieces of information about the printer operation are provided by printing a test page from the computer? (Choose two.)

- confirmation that the color calibration is optimized
- verification of print spool settings
- confirmation that duplex (double-sided) printing is working correctly
- **verification that driver software is working correctly**
- **confirmation that printer and computer are communicating**

31. A technician wants to add a new shared network printer to a computer. The printer is not shown in the list of available printers. What two actions can the technician take to add the printer? (Choose two.)

- Enter the printer model.
- **Enter the printer IP address.**
- Access a command prompt and use the net use command to locate the printer and printer path.
- **Browse for the printer on the network.**
- Enter the name of the computer used to share the printer.

32. A technician is installing a new printer in a cool, damp environment. After the printer cabling is done, and the software and print driver are installed, the printer test page jams. What is the most likely cause of the print failure?

- incorrect printer driver
- **too much humidity**
- not enough printer memory
- loose printer cables

33. What type of security attack is being launched when a hacker calls a company to obtain computer login information and pretends to be an employee?

- spyware
- phishing
- adware
- Trojan
- **social engineering**

34. Which two aspects of a computer can be protected by setting the BIOS password? (Choose two.)

- network address assignment method
- **hard drive settings**
- operating system login
- **operating system booting**
- file system management
- firewall settings

35. After logging into a computer, a user can view files but is unable to download the files. What action can the administrator take to allow the user to download the files while preventing deletion of the files?

- Set the folder permissions to Read.
- Set the file permissions to Modify.
- Set the file permissions to Full Control
- **Set the file permissions to Read and Execute.**

36. The PC support person has heard of an instance where departmental secretaries go to lunch and leave their computers unlocked and remain logged into their account. Which Windows feature would the technician use to help in this situation?

- AutoRun
- BIOS/UEFI password
- **idle timeout and screen lock**
- Windows firewall

37. A customer is angry and calls to complain that the service scheduled on the computer took longer than expected. The technician reviews the work order and notices that the service was performed by a new employee. How should the technician respond?

- Verify that the computer is working properly now.
- **Listen to the complaint and then apologize for any inconvenience caused by the lengthy service on the computer.**
- Explain that the repair technician sent to perform the service is inexperienced.
- Put the customer on hold until a supervisor is available.

38. Refer to the exhibit. During the troubleshooting of software that is installed on a computer system, a level one technician requires help from a level two technician. The file shown in the exhibit must be sent to the level

two technician. How should the level one technician deliver this file?

```
<output ommited>
<server address='192.168.1.2' />
<server port='8752' />
<server protocol='tcp' />
<server protocol='utp' />

<user username="johndoe" password="s3cr3t" roles="administrator" />
<user username="janedoe" password="1P455W0d!" roles="user"/>
<user username="guest" password="G355_1t" roles="none"/>

<output ommited>
```

- This file should not be shared with the level two technician.
- **Replace all passwords in the file with <password omitted> before emailing the file and then supply the passwords by secure means, if required.**
- Send the file as it is to the level two technician.
- Deliver the file in printed format only.

Explanation: Customer privacy should be maintained. The easiest way to preserve it is removing any occurrence of passwords from the documentation that is being sent to another technician. If a client password is required to solve the problem, it should be sent to another technician through a specific document.

39. What determines the level of support that a call center technician will provide to an individual customer?

- **Support is based on the SLA for that customer.**
- All customers receive the same level of support by the call center.
- A level one technician will provide a higher level of support than a level two technician.
- An individual call center technician chooses the level of support based on the time available to assist the customer.

40. After resolving an intermittent CD-ROM drive fault by firmly reconnecting a loose cable, the technician then decides to inspect all other cable connections to prevent other faults from occurring. Which two conditions will help to prevent future cable and connector faults? (Choose two.)

- **There are no missing or bent connector pins.**
- Cables are stretched tight between connectors.
- **Cables are not bent sharply around adapter cards.**
- Device data cables exceed manufacturer specifications.
- The connector retaining screws have been over tightened with a screwdriver.

41. A technician has been asked to reinstall the OS on a computer that has a corrupted operating system. The technician inserts the installation media in the optical drive. What would be the most likely action the technician should perform next?

- **Change the boot sequence in the BIOS.**

- Change the BIOS password.
- Flash the BIOS for a firmware upgrade.
- Change clock speeds in the BIOS.

42. What are three common causes of operating systems problems? (Choose three.)

- **a corrupted registry**
- incorrect IP addressing information
- loose cable connections
- **failed service pack installation**
- CMOS battery problem
- **virus infection**

Explanation: Typical causes of operating system problems are as follows:

- corrupted or missing system files
- incorrect device driver
- failed update or service pack installation
- corrupted registry
- failing of faulty hard drive
- incorrect password
- virus infection
- spyware

43. Which built-in BIOS diagnostic test would a technician run to check a computer boot problem?

- memory test
- POST test
- **start test**
- battery test

44. What are three features of GPS on mobile devices? (Choose three.)

- phone number lookup
- **navigation**
- **specialized search results**
- **device tracking**
- remote wipe
- gas mileage calculations

45. In Windows 7, which path will give access to parental control?

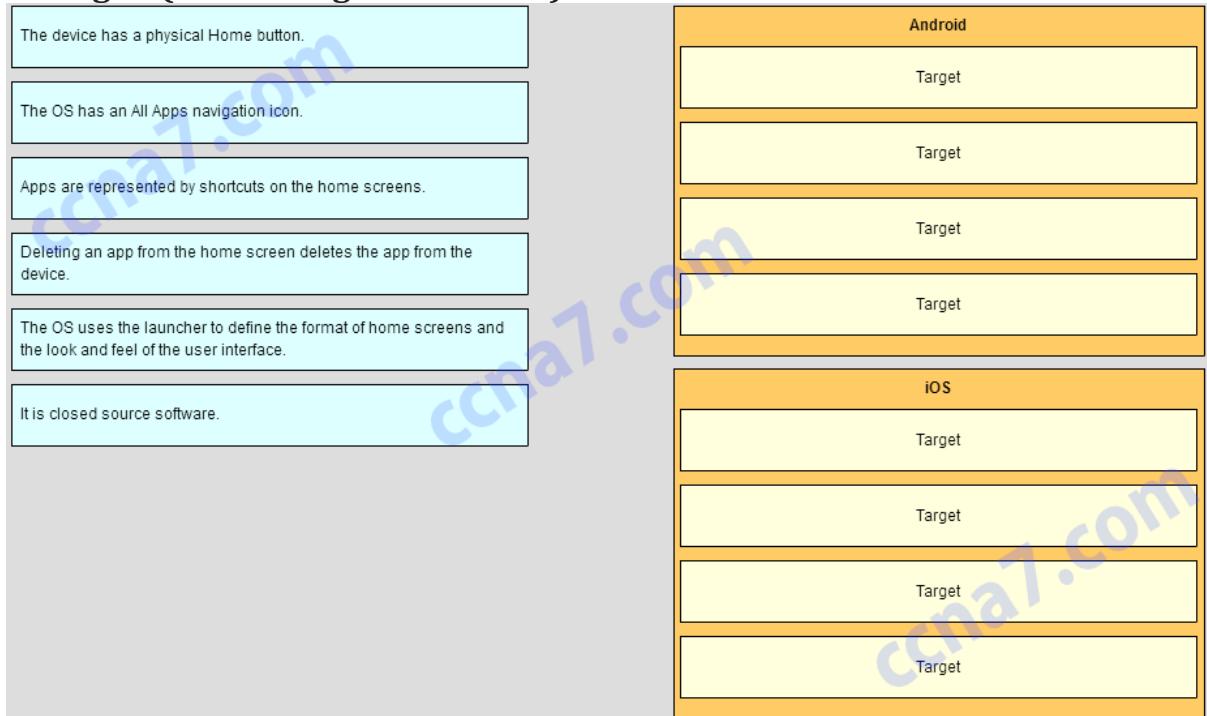
- Start > Control Panel > Network and Internet > Internet Options > Security tab
- **Start > Control Panel > User Accounts and Family Safety > Parental Controls**
- Start > Control Panel > User Accounts and Family Safety > User Accounts > Change User Account Control settings
- Start > Control Panel > Network and Internet > Internet Options > Parental Control link

46. A user calls the help desk reporting that a laptop with Linux freezes on startup and displays kernel panic. What could cause this problem?

- **A driver has become corrupted.**

- GRUB or LILO has been deleted.
- GRUB or LILO has been corrupted.
- An application is using a resource that has become unavailable.

47. Drag the statements on the left to the mobile OS that they describe on the right. (Not all targets are used.) Question



Answer

Android	Target
The OS uses the launcher to define the format of home screens and the look and feel of the user interface.	
The OS has an All Apps navigation icon.	
Apps are represented by shortcuts on the home screens.	
iOS	Target
Deleting an app from the home screen deletes the app from the device.	
It is closed source software.	
The device has a physical Home button.	

48. Drag the description to its matching cable type. Question

7-pin cable that connects to an external hard drive	HDMI
developed for high-definition televisions but also popular with computers	PS/2
6-pin mini-DIN connector for a keyboard or mouse	BNC
used for analog video and has 15 pins in 3 rows	DB-15
connects coaxial cables to devices and is used with digital or analog audio and video	eSATA

Answer

developed for high-definition televisions but also popular with computers

6-pin mini-DIN connector for a keyboard or mouse

connects coaxial cables to devices and is used with digital or analog audio and video

7-pin cable that connects to an external hard drive

used for analog video and has 15 pins in 3 rows

49. Match the computer problem with the area of the system affected by the problem. Question

incorrect IP address

using default administrator password

incomplete service pack update

corrupted registry

incorrect wireless configuration

incorrect firewall configuration

Operating System

Target

Target

Security

Target

Target

Network

Target

Target

Answer

Operating System
incomplete service pack update
corrupted registry
Security
using default administrator password
incorrect firewall configuration
Network
incorrect IP address
incorrect wireless configuration

50. Drag the statements on the left to the mobile OS that they describe on the right. (Not all targets are used.)

The device has a physical Home button.

The OS has an All Apps navigation icon.

Apps are represented by shortcuts on the home screens.

Deleting an app from the home screen deletes the app from the device.

The OS uses the launcher to define the format of home screens and the look and feel of the user interface.

It is closed source software.

Android

Target

Target

Target

Target

iOS

Target

Target

Target

Target

Answer



51. Refer to the exhibit. A user issues the command ls -l in a Linux system. Match the description to the result of the command output. (Not all options are used.)

```

-rw-r--r--  1 steve  charles   9753 Sep 27 11:14 action
-rw-----  1 steve  charles   1564 Apr 28 14:35 meeting
-rw-----  1 steve  charles   1119 Apr 28 16:00 notes
-rw-r--r--  1 steve  charles   94031 Sep  1 16:07 plan
drwxr-xr-x  6 steve  charles   1024 Jun  8 16:46 project
-rw-r--r--  1 steve  charles   4131 Sep 21 15:23 steps

```

group name

directory name

directory and file owner

permissions assigned with 544

permissions assigned with 600

permissions assigned with 755

-rw-----

permissions assigned with 600

steve

directory and file owner

project

directory name

charles

group name

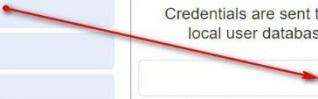
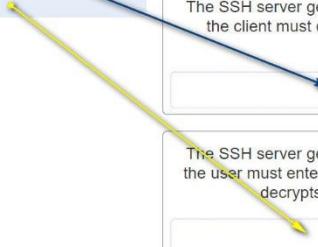
drwxr-xr-x

permissions assigned with 755

52. Match remote access authentication methods to the description. (Not all options are used.)

Username/Password	Credentials are sent to the SSH server which are then verified against a local user database or sent to a centralized authentication server.
Kerberos	
Host-based authentication	
Public key authentication	The SSH server generates a challenge with the public key of the client and the client must decrypt the challenge with the matching private key to complete the authentication.

Answer

Username/Password		Credentials are sent to the SSH server which are then verified against a local user database or sent to a centralized authentication server.
Kerberos		
Host-based authentication		The SSH server generates a challenge with the public key of the client and the user must enter a passphrase to access the matching private key which decrypts the challenge to complete the authentication.
Public key authentication		The SSH server generates a challenge with the public key of the client and the client must decrypt the challenge with the matching private key to complete the authentication.

53. Match the scripting language with the script file name extension. (Not all options are used.)

.py	Linux Shell Script
.sh	.sh
.js	Windows Batch File
.bat	.bat
.vbs	PowerShell
.ps1	.ps1
	Python
	.py
	JavaScript
	.js

54. What are two potential risks that could result from rooting or jailbreaking a mobile device? (Choose two.)

- improving device performance
- **not properly creating or maintaining sandboxing features**
- **enabling app access to the root directory**
- allowing the user interface to be extensively customized
- enabling features that are disabled by a cellular carrier

Explanation: Rooting and jailbreaking mobile devices allows customization of the OS which enables user and app access to the root directory. In addition, rooting and jailbreaking may cause a device to not properly create or maintain sandboxing features. Both of these can create security risks to the device. The three incorrect options are all considered potential benefits of rooting and jailbreaking mobile devices

55. What two tasks should be done regularly to preserve the security and integrity of data and applications on mobile devices. (Choose two.)

- Password protect iTunes or Google Play accounts.

- Use airplane mode if you are accessing the Internet at an open Wi-Fi site.
- **Ensure that the operating system software and applications contain the latest updates.**
- Unmount all unused disk partitions.
- **Back up user data on a regular basis.**
- Execute a factory reset once a month to remove all unidentified malicious software.

Explanation: To help secure and protect the software and data on mobile devices, it is a best practice to do frequent backups. Another best practice is to ensure that all patches and updates are applied to software and applications. Patches and updates usually fix vulnerabilities as well as introduce new features.

56. A user notices that a mobile device is draining power faster than is normal. What are three causes of quick battery drain? (Choose three.)

- **The display is set to a high level of brightness.**
- The airplane mode is turned on.
- The device is connecting over a VPN.
- An app is not compatible with the device.
- **An app is using too many resources.**
- **The device is roaming between call towers.**

Explanation: Quick battery draining is most likely caused by roaming between call towers, a display that is set to a high level of brightness, or apps that are using too many resources. If an app is not compatible with the device, the device OS will freeze. If the operating system has encountered an error, the device will fail to respond.

57. Which two operations can help prevent a mobile device from being tracked without permission? (Choose two.)

- **Disable or remove apps that allow connections to the GPS.**
- Set the device to connect only to known WiFi networks.
- Use a VPN connection whenever possible.
- **Turn off the GPS when not in use.**
- Set the device to not store credentials.

Explanation: Device tracking relies on GPS function. Turning off the GPS when not in use and disabling or removing apps that use the GPS function may prevent a device from being tracked.

58. Which component uses the greatest amount of power on most mobile devices?

- camera
- CPU
- media player
- **LCD screen**

Explanation: The LCD screen consumes the most power on most mobile devices. The CPU, camera, and media player use power, but less extensively than the LCD screen does.

59. What tool is included in the Mac OS X for backing up disks to image files and recovering disk images?

- System Restore
- Deja Dup
- Disk Error-Checking
- **Disk Utility**

Explanation: The Mac Disk Utility allows an administrator to configure automatic disk backups. The Deja Dup tool is a tool built into the Linux OS for backing up data. Disk Error-Checking is a Windows tool for checking the integrity of files and folders. The System Restore tool is a Windows tool for allowing an administrator to roll back the operating system to a previous configuration.

60. When a user tries to run a program a missing or corrupt DLL message is displayed. What are two possible solutions to this problem? (Choose two.)

- **Run sfc/scannow in Safe Mode.**
- Use the msconfig command to adjust the startup settings for the program.
- Run Windows Startup Repair.
- Reinstall the correct drivers.
- **Register the DLL file using the regsvr32 command.**

Explanation: Two possible solutions to a reported missing or corrupt are to register the DLL file using the regsvr32 command or restart the computer in Safe Mode and run sfc/scannow. Windows Startup Repair is used solve Windows startup problems. Adjusting the program startup settings by using msconfig is applicable only to programs that start correctly. Drivers relate to hardware, not to programs.

61. A computer repeatedly locks without any error message. Which two conditions may be the cause of the problem? (Choose two.)

- **The computer has a virus.**
- The UAC has been turned off.
- The CPU needs to be upgraded.
- **An update has corrupted the operating system.**
- The index service is not running.
- The user has breached the user security policy.

Explanation: If a computer locks without an error message, hardware or software could be the issue. Problems could include the following:

- The CPU or FSB are set incorrectly on the motherboard or in the BIOS.
- The computer is overheating.
- An update has corrupted the operating system.
- The RAM is failing or a RAM module is failing.

- The hard drive is failing.
- The power supply is failing.
- The computer has a virus.

62. A user has submitted a trouble ticket stating that their computer is showing the error “**BOOTMGR is missing**”. The IT technician replicates the error and finds that it occurs after the POST of this Windows 10 machine. What are two possible solutions for this problem? (Choose two.)

- Run the bootrec /fixboot command.
- **Run chkdsk /F /R from the recovery console.**
- **Restore BOOTMGR using the Windows Recovery Environment.**
- Run virus removal software.
- Use the last known good configuration to boot the computer.

Explanation: The message “**BOOTMGR is missing**” could be a symptom of a missing or damaged **BOOTMGR**, a **Boot Configuration Data** file missing or damaged, a boot order not set correctly in **BIOS**, a corrupted **MBR**, or a failing hard drive. Because the OS cannot be located to start, the fix cannot be done using a regular command.

63. A user calls the help desk and reports that invalid system disk or invalid boot disk error messages display on the workstation when it is powered on. When a technician comes to the office, the user mentions that the workstation was working well the day before. The technician suspects that the **MBR is corrupted**. Which process can the technician use to check and repair the MBR?

- **Run the bootrec command.**
- Run the sfc command.
- Run the chkdsk command.
- Boot the workstation in Safe Mode.

Explanation: The **bootrec** command can be used to repair and troubleshoot MBR issues. The **chkdsk** command can be used to check the integrity of files and folders by scanning the hard disk surface for physical errors. The **sfc** command can be used to verify and replace important Windows system files.

64. A technician is visiting a website and is using Google Chrome on a Windows 10 PC. The technician is trying to view the password for the website. The technician uses the Credential Manager to view the password but cannot see it. What could be the cause?

- The browser had crashed after accessing the website.
- The Credential Manager will only store system passwords.
- The website visited placed a cookie disallowing the storage of the password.
- **Web credentials are not saved for sites accessed by browsers other than Explorer and Edge.**

Explanation: Windows Credential Manager will only store passwords for websites that are visited using Explorer or Edge. Credentials created with other browsers must be managed from within the browser software.

65. A technician is troubleshooting an employee laptop that has a wired network connectivity issue. The laptop can connect to the internet when used inside the office but cannot connect to the network when used in a research lab. The company uses DHCP in the office but does not use DHCP in the research lab. How can the technician address this issue?

- **Implement an Alternate Configuration IPv4 address on the laptop.**
- Modify the DNS server IPv4 address on the laptop.
- Modify the proxy settings used on the laptop.
- Adjust the default gateway IPv4 address on the laptop.

Explanation: By setting up an alternate IPv4 address on the laptop, the user will be able to move between a network with DHCP and another network that requires a static IPv4 address.

66. Which two statements are correct about level one and level two technicians? (Choose two.)

- Level two technicians prepare a work order and escalate it to a level one technician if a problem cannot be resolved within ten minutes.
- Level two technicians are often referred to as “incident screeners,” and level one technicians are often referred to as “product specialists.”
- **Level two technicians are usually more knowledgeable about technology than the level one technicians are.**
- **Level two technicians usually respond to the “down calls” as they may be able to resolve them faster.**
- Level one technicians usually work on the problems that require opening up the computer case.

Explanation: Call centers sometimes have different names for level one and level two technicians. Level one technicians might be known as level one analysts, dispatchers, or incident screeners. Level two technicians might be known as product specialists or technical-support personnel.

The level two technician is usually more knowledgeable than the level one technician is about technology, or has been working for the company for a longer period of time. When a problem cannot be resolved within a predetermined amount of time, the level one technician prepares an escalated work order.

67. What two roles or tasks are associated with level two technicians? (Choose two.)

- escalating a trouble ticket to a higher level technician
- gathering customer information to initiate a work order
- **remotely updating drivers and software on customer computers**
- **gathering diagnostic information from a customer computer**
- prioritizing incoming calls according to their severity

Explanation: Level two technicians are primarily tasked with receiving and working on escalated work orders. Their tasks involve using remote access software to connect to the computer of a customer to perform maintenance and fixes.

68. When performing computer forensics what is required to prove a chain of custody?

- an admission of guilt
- **proper documentation procedures**
- expert testimony
- collected evidence

Explanation: A chain of custody requires accurate and thorough documentation to track the collected evidence.

69. A technician has copied several commercial movies to a company server to be shared with colleagues. How would this behavior be classified?

- acceptable
- **ethically wrong and illegal**
- illegal but ethical
- ethically wrong but legal

Explanation: It is not permissible to install, copy, or share digital content (including software, music, text, images, and video) in violation of copyright and software agreements or applicable laws. This is legally and ethically wrong.

70. A call center technician answers a call from a frequent customer who is known to be impatient and lacks experience with computers. The customer has an issue with an application that the call center supports. The customer informs the technician that the problem had been reported before but the original technician was rude, did not listen, and did not fix the problem. If the technician is confident that the problem can be resolved by increasing the amount of memory in the computer, what should the technician do?

- Suggest that the customer purchase a new computer.
- Tell the customer to install 2 GB of DDR3 PC3-10600 RAM.
- **Confirm the issues and give detailed instructions to solve the problem.**
- Explain that the original technician is no good and the supervisor will be told.

Explanation: When dealing with customers, a technician must show professionalism in all aspects. When explaining the solution to solve the problem, a technician should provide a simple step-by-step process of instructions. The technician should speak in plain terms and avoid the industry jargon.

71. A call center technician has asked a customer to perform a simple operation to fix a problem on a computer. The customer seems unable to perform the task. What should the technician do?

- **Determine whether the customer would prefer to receive the instructions in another form, such as emailed, illustrated written instructions.**
- Explain to the customer that it is a simple task and ask the customer to try it again.
- Tell the customer that another technician will explain the task .
- Ask the customer to find someone with more experience to perform the task.

Explanation: When providing a solution to solve a problem, a technician should prepare to explain alternative ways that the technician can help the customer, if necessary, such as emailing information, faxing step-by-step instructions, or using remote control software to solve the problem.

72. An IT technician is troubleshooting a file error on an employee laptop. While working in the system files directory, the technician notices that the User Account Control (UAC) box appears requesting a password. What should the IT technician do next?

- Call the employee and apologize for the delay in repairs and request the administrator password over the phone.
- **Call the employee and ask the employee to come to the IT department to enter the necessary credentials.**
- Shutdown the laptop and email the employee with a request for the administrator account password of the supervisor.
- Shutdown the laptop, boot it from a bootable CD/USB, and modify the system files to complete the repair.

Explanation: The employee may have dropped off the laptop expecting repairs using the local user account. It is important to get permission from the customer before accessing other computer accounts, including the administrator account. If private information, such as usernames and passwords are being collected, it is important to keep them as confidential as possible.

73. Which two Windows operating systems cannot be upgraded to Windows 8.1 64-bit? (Choose two.)

- Windows 7 64-bit
- **Windows 7 32-bit**
- Windows 8 64-bit
- **Windows XP 64-bit**
- Windows Vista 64-bit

Explanation: Neither Windows XP nor Windows 7 32-bit can be upgraded to Windows 8.1 64-bit. A 32-bit operating system cannot be upgraded to a 64-bit operating system. A Windows XP system cannot be directly updated to Windows 8.1. In either of these cases, a clean installation must be performed.

74. A user wishes to upgrade a PC to Windows 10 from a PC that is running a 32-bit version of Windows 7. Which two editions of Windows 10 will support this upgrade? (Choose two).

- 64-bit version of Windows 10 Pro
- **32-bit Windows Home**
- **32-bit version of Windows 10 Pro**
- 64-bit version of Windows 10 Enterprise
- 64-bit version of Windows Home

Explanation:

- A direct upgrade from a 32-bit version of Windows 7 to a 64-bit version of Windows 10 is not supported. To move to a 64-bit version, a clean installation is required.
- The upgrade path from Windows 7 supports both the Home and Pro editions of Windows 10, but only in the same architecture (32-bit to 32-bit)

75. After a computer is powered on, Windows 7 fails to start. What initial procedure would a technician use to deal with this failure?

- Press the F12 key during the boot process and start the computer in Safe Mode.
- **Boot from a Windows 7 installation media and access the System Restore utility.**
- Access the Control Panel and choose Restore Files from Backup from the System and Security menu.
- Create a System Repair Disc and restore the image.

Explanation: There are many reasons that could cause a PC not to start, including hardware failure, MBR corruption, a hardware driver that was not installed properly, etc. One approach for PC troubleshooting is to boot the PC with a Windows 7 installation DVD and use the System Restore utility to restore the system. To access Safe Mode, we need to press the **F8** key (not the F12 key). The other two options assume that the PC can start.

76. Which statement is correct about installing a 32-bit operating system on a x64 architecture?

- This combination will provide better security.
- The OS can address more than 128 GB of memory.
- **The OS will run correctly.**
- The OS will always make use of all the RAM available.

Explanation: A 32-bit operating system can run on a x64 architecture, but it will not be able to use more than 4 GB of the system memory. A 64-bit OS includes features that provide additional security.

77. A technician is attempting to create multiple partitions on a hard disk that is using the boot sector standard that supports a maximum partition size of 2TB. What is the maximum number of primary partitions allowed per hard drive?

- 128
- 32
- **4**
- 2

- 16
- 1

Explanation: Master boot record (MBR) is the boot sector standard that supports a maximum primary partition of 2TB. MBR allows four primary partitions per drive. The globally unique identifier (GUID) partition table standard (GPT) can support enormous partitions with a theoretical maximum of 9.4ZB (9.4 x 10 to the 24th bytes). GPT supports a maximum of 128 primary partitions per drive.

78. A network administrator is tasked with deployment of Windows 10 Pro for a large number of new PCs in the company. The administrator uses a PC to perform a base installation together with standard company applications. The PC is tested to be fully functional. Which tool must the administrator use to remove all computer and user specific information before building a deployable image from the disk?

- Unattended.bat
- Ntoskrnl.exe
- Windows Easy Transfer
- **Sysprep.exe**

Explanation: When a base installation of an OS together with applications is being performed, some computer and user specific information is included. This includes such items as SID, user accounts, and time zone. Before an image for deployment is finally created, the specific information must be removed. The Microsoft System Preparation (sysprep.exe) tool can be used for the task.

79. A network analyst is booting a PC that has Windows 8 installed. The boot process is currently working on the following step: The BIOS boots the computer using the first drive that contains a valid boot sector. What is the next step that will happen in the boot process?

- WINLOGON.EXE displays the Windows Welcome screen
- NTOSKRNL.EXE starts the login file called WINLOGON.EXE.
- **The code in the boot sector is executed and the control of the boot process is given to Windows Boot Manager.**
- The Windows kernel takes over the boot process.

80. A help desk technician notices an increased number of calls relating to the performance of computers located at the manufacturing plant. The technician believes that botnets are causing the issue. What are two purposes of botnets? (Choose two.)

- to gain access to the restricted part of the operating system
- **to transmit viruses or spam to computers on the same network**
- to withhold access to a computer or files until money has been paid
- to record any and all keystrokes
- **to attack other computers**

Explanation: Botnets can be used to perform DDoS attacks, obtain data, or transmit malware to other devices on the network.

81. A company has a security policy that permits the reuse of wiped drives in other computers. The wiped drives are often used for additional storage or as a replacement drive. What are two methods that could be used to wipe data? (Choose two.)

- EFS encryption
- **degaussing equipment**
- **data wiping software**
- multifactor erasure
- biometric scanner

Explanation: Data wiping software overwrites data multiple times. A degaussing wand or degaussing device uses magnetism to destroy data on a hard drive.

82. A technician is configuring a SOHO computer. The technician wants to create a local account that requires a password and wants a screen saver to appear if the person using the computer steps away for a period of time. Which two Windows Control Panels will the technician use to accomplish these tasks? (Choose two.)

- Programs
- Hardware and Sound
- **Personalization**
- Ease of Access
- Network and Internet
- **User Accounts**

Explanation: The User Accounts Windows Control Panel is used to create and manage local user accounts and configure passwords for each account. The Personalization Windows Control Panel is used to access the Screen Saver Settings window where the computer can be configured to display the logon screen if there is no use for a preconfigured amount of minutes.

83. After confirming the removal of a virus from a computer, how should the technician ensure and verify the full functionality of the system?

- Talk with the user to determine the cause of the problem.
- **Check for the latest OS patches and updates.**
- Gather information from a number of sources to clearly identify the problem.
- Document the problem and the procedures performed to solve it.

Explanation: After resolving a computer problem, the next step is to verify full functionality by ensuring that the OS is up to date and by testing the operation of the computer and the network that it is connected to. Documenting the issue and solution is the final step, whereas gathering information from the user and other sources are earlier steps in the troubleshooting process.

84. What is the next troubleshooting step after a theory of probable cause has been established?

- Document findings and outcomes.
- Identify the exact problem.

- **Test the theory to determine cause.**
- Establish a plan of action.

Explanation: There are six steps in the troubleshooting process.

1. Identify the problem.
2. Establish a theory of probable cause.
3. Test the theory to determine cause.
4. Establish a plan of action to resolve the problem.
5. Verify full system functionality.
6. Document findings.

85. A technician has been notified of a problem on the network. After investigation, the technician determines that a specific internal company computer is launching an attack on other company computers. Which type of malware is being used?

- rootkit
- **Trojan**
- spoofing
- DoS

Explanation: A proxy Trojan is a type of malware that uses one computer as a source device to launch attacks to other devices. Malware evolves quickly so it is important to obtain the most recent antimalware updates as a protective measure.

86. What is a recommended best practice for a technician who must perform tasks that require administrative access?

- Ask the current user to log off, restart the computer, and then log in with the administrator account.
- Prevent the computer from contacting the network authentication server by disabling the network card and then log in with an administrator account.
- Log off the computer and then log in with an account with administrator privileges.
- **Use a standard account with limited permissions, and then use the Run as Administrator option to perform the task that requires elevated privileges.**

Explanation: In addition to nontechnical users having a standard user account, it is also a best practice to make technical staff use a limited account. Then when an administrative task is needed, the technician uses the **Run as Administrator** option and provides the appropriate credentials of an account that has elevated credentials for the one task.

87. A technician is troubleshooting a Windows 10 PC that has a .dll file for an application that has not been registered. Which administrative command-line tool or command can be used to address this?

- robocopy
- type
- **regsvr32**

- net user

88. A technician has been asked by a manager to recommend a security solution for protecting a computer against boot sector viruses. Which security technique should the technician recommend?

- encryption
- **antimalware**
- TPM
- dual authentication

89. True or False? When a user is working on a system that uses a network file system, there is no difference between accessing a file stored locally or on another computer on the network.

- False
- **True**

90. An instructor is discussing facts about different mobile device operating software. The instructor states: "To synchronize a mobile device to a PC, iTunes must be installed on the PC." To which OS does this relate: iOS, Android, or both?

- both
- Android
- **iOS**

91. A client installed a new driver for a device three weeks ago; however, this driver is causing the system to freeze occasionally and the client wishes to revert back to the old driver. What option can be used to address this issue without loss of data or applications?

- **Reset this PC.**
- Use Advanced Start-up.
- Go back to the initial Windows build.
- Uninstall and reinstall the device using device manager.

92. When a security audit is performed at a company, the auditor reports that new users have access to network resources beyond their normal job roles. Additionally, users who move to different positions retain their prior permissions. What kind of violation is occurring?

- **least privilege**
- password
- audit
- network policy

Explanation: Users should have access to information on a need to know basis. When a user moves from job role to job role, the same concept applies.

93. An instructor is discussing facts about different mobile device operating software. The instructor states: "To help prevent malicious programs from infecting the device, mobile device apps are run in a sandbox that isolates them from other resources." To which OS does this relate?

- iOS
- Android
- **or both**

94. True or False? Hard drives partitioned with a master boot record (MBR) cannot have an extended partition or logical drives.

- True
- **False**

95. A technician is troubleshooting a Windows 10 computer that displays an “Invalid Boot Disk” error message. What should be the first action the technician should take to troubleshoot the issue?

- **Change the boot order in the UEFI/BIOS settings to select the drive that has the operating system installed as the first boot device.**
- Boot the computer in Safe Mode and run sfc / scanno w .
- Use the last known good configuration to boot the computer.
- Run the command chkdsk .

Explanation: The first thing the technician should do when addressing an “Invalid Boot Disk” error message is to ensure that the boot order in the UEFI/BIOS settings is set to drive that has the operating system installed as the first boot device.

96. A technician is troubleshooting a Windows 10 PC. The PC has an application that displays an error message about a missing DLL. The technician has located the DLL file on the PC and wants to register it. Which command line tool can the technician use for the task?

- **regsvr32**
- dism
- sfc
- regedit

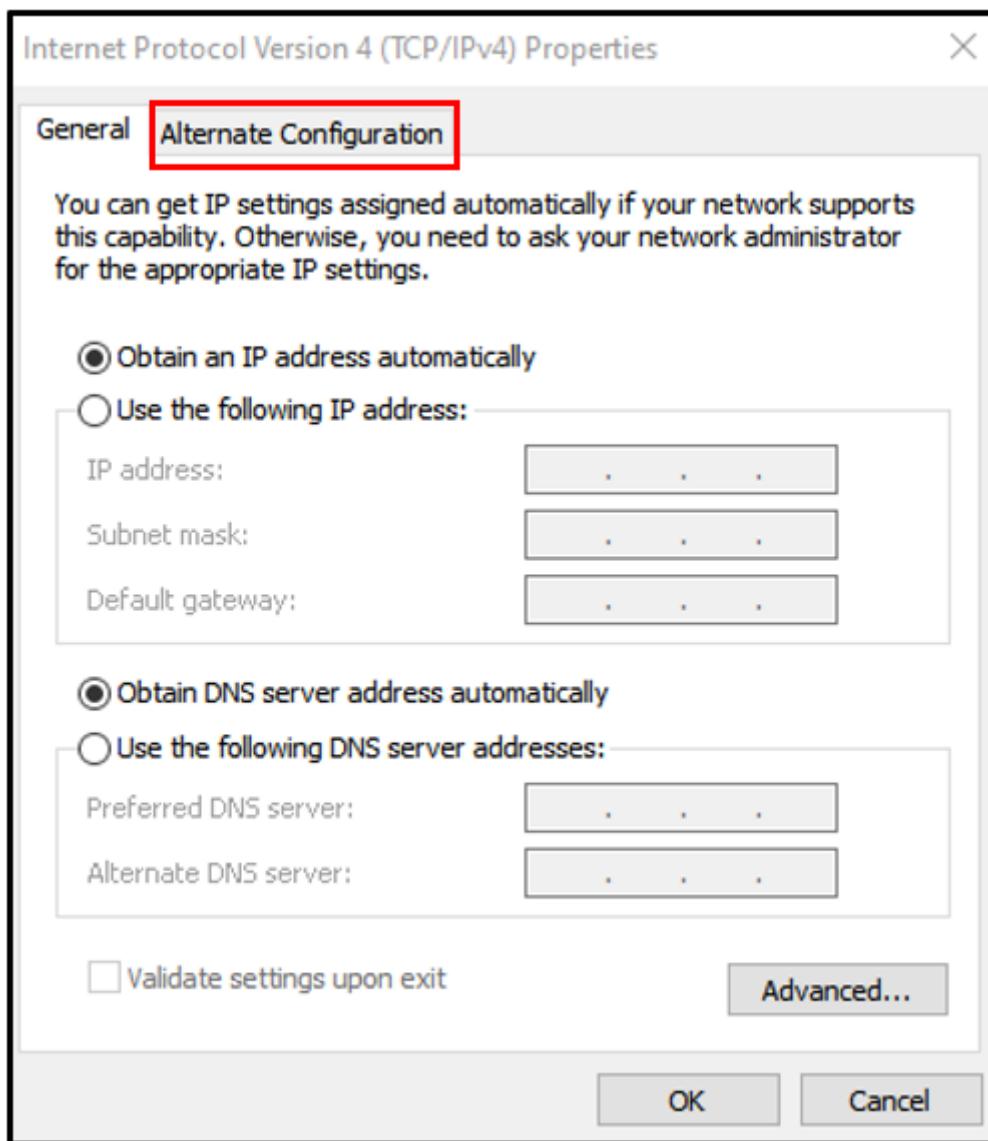
Explanation: The administrative command line tool regsvr32 in Windows 10 can be used to register and unregister .dll files and ActiveX controls in the Registry.

97. A technician wants to split a large partition on a drive in a Windows 10 PC without loss of any data. How can this be accomplished?

- **Shrink the existing partition and create a new partition from the unallocated space.**
- Delete the existing partition and format the disk with two new partitions.
- Reinitialize the disk and create new partitions.
- Delete the existing partition and create two new partitions.

Explanation: Use Disk Manager to shrink the size of the existing partition. This creates unallocated space that can be used to create a new partition without loss of data on the existing partition.

98. A network technician is troubleshooting a DHCP issue for a user and has requested assistance from a senior technician. The senior technician provides the graphic to illustrate configuration options. What is the purpose of the Alternate Configuration feature?



- It allows an administrator to choose a secondary network interface card (NIC) for the PC to use if it is having difficulty contacting a DHCP server.
- It allows an administrator to specify the IP address of a DHCP server when a PC is having trouble receiving an IP address dynamically.
- **It allows an administrator to configure an alternative IP address for the PC to use if it is unable to contact a DHCP server.**
- It allows an administrator to change the MAC address of the PC in order to receive another IP address from a DHCP server.

Explanation: The Windows Internet Protocol Version 4 (TCP/IPv4)

Properties window includes an **Alternate Configuration** tab which allows an administrator to configure an alternative IP address for the PC to use if it is unable to contact a DHCP server.

99. Which two data storage locations contain persistent data that can be used by computer forensics specialists? (Choose two.)

- RAM
- CPU registers
- **hard disk drives**
- cache
- **solid state drives**

Explanation: Persistent data is data stored on an internal or external hard drive, or an optical drive. Data is preserved when the computer is turned off.

100. Chad, a level one call center technician, receives a customer phone call. The customer has an issue that Chad does not have the knowledge to answer. The customer is irritated that Chad cannot provide immediate assistance. Which two things should Chad do next? (Choose two.)

- Inform the customer of the need to call back later.
- **Document the reason the customer called and create a support ticket.**
- **Escalate the customer to a level two technician.**
- Ask the customer further questions to diagnose and attempt to fix the problem.
- Place the customer on hold until the customer has time to cool down.

Explanation: When a customer contacts a call center, the level one technician should always create a ticket and document the problem that the customer is experiencing. If the level one technician is unable to provide assistance, the technician should escalate the ticket to a level two technician.

101. What is the best definition of personally identifiable information (PII)?

- Data that is collected by businesses to track the digital behavior of consumers.
- Data that is collected from servers and web browsers using cookies in order to track a consumer.
- Data that is collected from servers and websites for anonymous browsing.
- **Data that is collected by businesses to distinguish identities of individuals.**

Explanation: Personally identifiable information (PII) is data that could be used to distinguish the identity of an individual, such as mother's maiden name, social security number, and/or date of birth.

102. An instructor is discussing facts about different mobile device operating software. The instructor states: "Remote backups are a cloud-enabled service for mobile devices." To which OS does this relate: iOS, Android, or both?

- iOS
- **both**
- Android

103. A Windows 10 computer suddenly started experiencing network connectivity issues after the latest Windows updates completed a week ago.

What option can be used to address this issue without loss of data or applications?

- Use Advanced Start-up.
- **Reset this PC.**
- Restore using Sysprep.
- Go back to the initial Windows build.

104. A user wants to display and change information about computer users.

Which administrative command-line tool or command can be used to address this?

- diskpart
- **net user**
- mstsc
- chkdsk

105. A user wants to display the contents of a text file in a command interpreter. Which administrative command-line tool or command can be used to address this?

- **type**
- net user
- chkdsk
- robocopy

106. True or False? Modern operating systems boot the computer, manage the file system, and support only one user, task, or CPU.

- True
- **False**

107. A user tries to install an application on a Windows 10 Pro PC but it fails. The user tries to uninstall the application but it fails to uninstall. What option can be used to address this issue without loss of data or applications?

- Use Advanced Start-up.
- **Use Restore Point.**
- Uninstall and reinstall the device using device manager.
- Restart the Windows Update services.

108. True or False? Multitasking describes a computer operating system that is capable of running multiple applications at the same time.

- **True**
- False

109. A technician is working on a Windows 10 PC that keeps freezing occasionally after a driver update. System restore has been turned off. What option can be used to address this issue without loss of data or applications?

- **Reset this PC.**
- Uninstall and reinstall the device using device manager.
- Restart the Windows Update services.
- Restore using Sysprep.

110. A technician is troubleshooting a Windows 10 PC that will not do any windows updates automatically or manually. What option can be used to address this issue without loss of data or applications?

- **Delete all the files in C:\Windows\SoftwareDistribution folder and restart the PC.**
- Perform a repair of Windows using Installation media.
- Restart the Windows Update services.
- Uninstall and reinstall the device using device manager.

111. A user wants to check a file system for errors, including errors with physical media. Which administrative command-line tool or command can be used to address this?

- **chkdsk**
- type
- net user
- robocopy

112. A technician wants to create customized system image files that will be installed on computers in the network. Which administrative command-line tool or command can be used to address this?

- **dism**
- robocopy
- type
- chkdsk

113. A user wants to terminate a running process on a computer. Which administrative command-line tool or command can be used to address this?

- **taskkill**
- robocopy
- type
- chkdsk

114. A technician wants to copy files and entire directory trees from one volume to another volume on a Windows 10 PC. Which administrative command-line tool or command can be used to address this?

- **robocopy**
- type
- net user
- chkdsk

115. A technician is troubleshooting a Windows 10 PC that has corrupted system files. Which administrative command-line tool or command can be used to address this?

- **sfc**
- chkdsk
- robocopy
- diskpart

116. A user wishes to see a summary of software information and system components, including hardware components, on a Windows 10 PC. Which administrative command-line tool or command can be used to address this?

- **msinfo32**

- chkdsk
- robocopy
- diskpart

117. A technician has just configured the security policy on a Windows 10 PC and wants to ensure the policy is implemented immediately. Which administrative command-line tool or command can be used to address this?

- **gpupdate**
- diskpart
- chkdsk
- mstsc

118. A technician has been asked by a manager to recommend a security solution for protecting a computer against keyloggers. Which security technique should the technician recommend?

- **antimalware**
- IPS
- encryption
- SSL

119. A technician has been asked by a manager to recommend a security solution for protecting a computer against adware programs. Which security technique should the technician recommend?

- **antimalware**
- ping sweep
- encryption
- SSL

120. A technician has been asked by a manager to recommend a security solution for protecting a computer against rootkits. Which security technique should the technician recommend?

- **antimalware**
- port scan
- encryption
- SSL

121. A technician has been asked by a manager to recommend a security solution for protecting a computer against Trojans. Which security technique should the technician recommend?

- **antimalware**
- RAID
- dual authentication
- encryption

122. A technician has been asked by a manager to recommend a security solution for protecting a computer against firmware viruses. Which security technique should the technician recommend?

- **antimalware**
- TPM
- dual authentication
- encryption

123. True or False? Smartphones require an operating system before they can be operated.

- **True**
- False

124. True or False? When a hardware device is installed, the operating system needs to use a device driver to access and use that hardware.

- **True**
- False

125. True or False? Windows 10 64-bit version can be installed on as little as 1GB of hard drive space.

- **False**
- True

126. True or False? DirectX is a collection of APIs related to multimedia tasks for Microsoft Windows.

- **True**
- False

127. True or False? The registry is a database that only contains information about the device drivers on a computer.

- **False**
- True

128. True or False? Multithreading describes an operating system that can support two or more CPUs.

- **False**
- True

129. An instructor is discussing facts about different mobile device operating software. The instructor states: "The start voice control function can be performed with the home button." To which OS does this relate: iOS, Android, or both?

- **iOS**
- both
- Android

130. An instructor is discussing facts about different mobile device operating software. The instructor states: "The mobile devices have a feature called Spotlight that is a search tool that provides information from many sources." To which OS does this relate: iOS, Android, or both?

- **iOS**
- both
- Android

131. An instructor is discussing facts about different mobile device operating software. The instructor states: "This OS can be used by programmers to operate devices like laptops, smart TVs, and e-book readers." To which OS does this relate: iOS, Android, or both?

- **Android**
- both
- iOS

132. An instructor is discussing facts about different mobile device operating software. The instructor states: “The icon on the Home screen is a shortcut to the app.” To which OS does this relate: iOS, Android, or both?

- **Android**
- both
- iOS

133. An instructor is discussing facts about different mobile device operating software. The instructor states: “To help prevent malicious programs from infecting the device, mobile device apps are run in a sandbox that isolates them from other resources.” To which OS does this relate: iOS, Android, or both?

- **both**
- Android
- iOS

134. An instructor is discussing facts about different mobile device operating software. The instructor states: “WIFI hotspots are a location data source that can be used by locator apps to determine the position of a mobile device.” To which OS does this relate: iOS, Android, or both?

- **both**
- Android
- iOS

135. An instructor is discussing facts about different mobile device operating software. The instructor states: “GPS signals are used to enable geocaching, geotagging and device tracking on these mobile devices.” To which OS does this relate: iOS, Android, or both?

- **both**
- iOS
- Android

136. An instructor is discussing facts about different mobile device operating software. The instructor states: “The user interface can be extensively customized using rooting or jailbreaking into a mobile device.” To which OS does this relate: iOS, Android, or both?

- **both**
- Android
- iOS

137. What is the purpose of “branching” in high-level programming languages?

- to add programming code that links to another application
- **to have a series of control flow statements**
- to add a different programming language to existing code
- to add sequential programming code

Explanation: Branching is a series of control flow statements in high-level programming languages. Branching occurs when an instruction tells a computer to begin executing a different part of a program rather than executing statements individually.

138. Which statement is true regarding mobile devices using the Wireless Wide Area Network (WWAN)?

- The bandwidth available over WWAN connections is fixed and is independent of the technologies supported by the adapter and the transmitter.
- They require a 64-bit operating system.
- They can only be connected through external WWAN USB adapters.
- **They require an adapter to link to a cellular provider's network through the nearest base station or transmitter.**

Explanation: Mobile devices use Wireless Wide Area Network (WWAN) or cellular Internet access technology. WWAN requires using an adapter to link to a cellular provider network through the nearest base station or transmitter. WWAN adapters can be internally or externally connected by USB. The bandwidth available over WWAN connections depends on technologies supported by the adapter and the transmitter, such as 3G or 4G. Connection to the WWAN is automatic once the adapter and adapter software are installed.

139. A user is trying to execute a file using elevated permission. The user right-clicks the file, chooses Run as Administrator, and chooses Yes in the User Account Control (UAC) window. The operation fails. What is the reason?

- The UAC does not have the elevated privileges option.
- The directory housing the file is read-only.
- **The user is not a member of the administrator group.**
- The login password of the user is invalid.

Explanation: An administrator password is required to open or execute a file using elevated permission, or the current user must belong to the Administrator group.

140. A technician has just purchased a new Windows 10 PC and wants to transfer selected files, folders, profiles, and applications from the old Windows PC. What tool or utility does Microsoft recommend to do this?

- Upgrade Assistant
- **PCmover Express**
- User State Migration Tool
- Windows Task Manager

Explanation: PCmover Express is the software tool recommended by Microsoft to automatically moves files, settings, and user profiles from an old PC to a new one. The free version is no longer available, and there is a cost to use it from LapLink.

141. Which tool is available to transfer user data and settings from an old Windows 10 PC to a new Windows 10 PC?

- Windows Upgrade Assistant
- Windows User Manager
- **User State Migration tool**

- Windows Easy Transfer
- Windows Upgrade Advisor

Explanation: When existing user data and settings need to be migrated from the old Windows 10 PC to the new Windows 10 PC, the User State Migration Tool can be used to do this.

142. What is the default file system used during a fresh installation of Windows 10?

- HPFS
- FAT16
- **NTFS**
- FAT32

Explanation: The default file system for a Windows 10 installation is NTFS.

143. What is a possible situation when it might be necessary to boot Windows 10 from a bootable recovery USB device?

- to delete registry keys
- to disable background services
- to partition the hard drive
- **to repair the operating system**

Explanation: You can boot Windows 10 from a repair boot USB drive and repair your computer with corresponding recovery tools, such as bootrec commands. A Windows 10 repair boot USB is a bootable recovery drive made with USB.

144. A manager is booting a tablet that has Windows 10 installed. The boot process is currently working on the following step: The Windows kernel takes over the boot process. What is the next step that will happen in the boot process?

- **NTOSKRNL.EXE starts the login file called WINLOGON.EXE.**
- The code in the boot sector is executed and the control of the boot process is given to Windows Boot Manager.
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.
- Winload uses the path specified in BOOTMGR to find the boot partition.

Explanation: The Windows 10 boot process is as follows:

1. PreBoot: POST or Power-On Self-Test loads firmware settings. It checks for a valid disk system, and if the system is good to go for the next phase. If the computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.

2. Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.

3. Windows OS Loader: WinLoad.exe loads important drivers to kick start the Windows Kernel. The kernel uses the drivers to talk to the hardware and do

rest of the things required for the boot process to continue.

4. Windows NT OS Kernel: This is the last stage which picks up the Registry settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen

145. An accountant is booting a PC that has Windows 10 installed. The boot process is currently working on the following step: BIOS locates and reads the configuration settings that are stored in the CMOS memory. What is the next step that will happen in the boot process?

- The code in the boot sector is executed and the control of the boot process is given to Windows Boot Manager.
- **The BIOS boots the computer using the first drive that contains a valid boot sector.**
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.
- Winload uses the path specified in BOOTMGR to find the boot partition.

Explanation: The Windows 10 boot process is as follows:

1. PreBoot: POST or Power-On Self-Test loads firmware settings (CMOS). It checks for a valid disk system, and if the system is good to go for the next phase. If the computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.

2. Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.

3. Windows OS Loader: WinLoad.exe loads important drivers to kick start the Windows Kernel. The kernel uses the drivers to talk to the hardware and do rest of the things required for the boot process to continue.

4. Windows NT OS Kernel: This is the last stage which picks up the Registry settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen

146. What is the name of the Windows Phone 10 digital, or virtual, assistant?

- Bing
- Spotlight
- **Cortana**
- Nova Launcher

Explanation: Siri is the well-known digital, or virtual, assistant that is available in iOS. Windows Phone 10 also has a digital assistant. It is called Cortana.

147. What are two possible solutions to any Windows computer restarting continuously and never displaying the desktop? (Choose two.)

- **Run chkdsk /F /R from the recovery console.**
- Reset the hard drive jumpers.
- **Open Control Panel and navigate to System and Security and disable automatic restart.**
- Upgrade the processor.
- Upgrade the video card.
- Access the BIOS and change the boot order options.

Explanation: Upgrading the processor, upgrading the video card, or resetting the hard drive jumper would not fix this problem. Boot order settings cannot cause the system to reboot continuously.

148. Where are 32-bit program files located in a 64-bit version of Windows 10 Pro?

- c:\Windows\system32
- c:\users
- c:\Program files
- **c:\Program files (x86)**

Explanation: In a Windows 10 64-bit operating system, 32-bit program files are located in the c:\programs (x86) folder, while 64-bit programs are located in the c:\Programs folder.

149. A corporate office is considering using an MDM policy to enhance its security parameters. What is achieved through the implementation of the MDM policy?

- It can be used to inventory all corporate assets.
- Sets policies for the applications that are allowed on a device.
- Blocks and tracks all incoming TCP connections.
- **It can be used to log the onboarding of BYOD devices.**

150. A technician receives a trouble ticket from a user reporting that a website is no longer accessible. What two questions would the technician ask to narrow down the potential problem? (Choose two.)

- **Can you access other web sites from this computer browser?**
- What operating system is installed on your computer?
- **Could you access this web site previously from this device?**
- What model computer are you using to access this site?
- Do you remember your password to this web site?

Explanation: To narrow down the problem, the technician asks if the computer was previously able to access the website and if other websites are accessible. If the answer is yes to both questions, the technician has narrowed the issue to problems with the single website on this day.

IT Essentials 7.0 8.0 Final Exam (Chapters 1-9) Answers Full

1. In which situation would an ESD strike potentially cause harm to the PC?

- **when replacing a mechanical hard drive with an M.2 SSD**
- when installing an additional display in a workplace cubicle
- when using a grounded mat and working on a computer on an ungrounded workbench
- when installing a dual-voltage power supply

2. A person has started a new technical job. In which situation would ESD be an issue?

- **when installing a processor**
- when using a grounded mat and working on a computer on an ungrounded workbench
- when installing a dual-voltage power supply
- while exchanging one laptop AC adapter with one that is not from the original equipment manufacturer

3. A technician is about to begin preventive maintenance on a company PC. In which situation would ESD be an issue?

- when walking across a carpeted area and then touching a keyboard that is attached to a tower PC
- when installing a UPS
- while attaching speakers to a surround sound card
- **when installing a processor**

Case 2:

- **when replacing a motherboard**
- while attaching speakers to a surround sound card
- when using a grounded mat and working on a computer on an ungrounded workbench
- when installing a dual-voltage power supply

Case 3:

- **when installing RAM**
- when walking across a carpeted area and then touching a keyboard that is attached to a tower PC
- when using a grounded mat and working on a computer on an ungrounded workbench
- when installing a dual-voltage power supply

4. An instructor has given a student an assignment to assemble a PC. In which situation should the student be aware that ESD is an issue?

- **when installing RAM**
- when working in a corporate environment that has carpet installed under tower PCs
- when using a grounded mat and working on a computer on an ungrounded workbench

- when installing a dual-voltage power supply

5. What two motherboard components control the system boot operations?

(Choose two.)

- **BIOS chip**
- **UEFI chip**
- Northbridge chip
- Southbridge chip
- CPU

Explanation: System boot services are provided by the motherboard BIOS and UEFI chips.

6. A technician is upgrading an ATX motherboard with another ATX motherboard. Which component might be affected by this and need to be upgraded and bought as an additional purchase?

- BIOS
- chipset
- CMOS battery
- **CPU**
- PCIe adapter

Explanation: The motherboard, CPU, and power supply must be compatible.

7. A customer has requested that a PC be built that will support eSATA.

Which component should be checked to be sure that this feature is supported?

- CPU
- **chipset**
- hard disk
- RAM module

Explanation: The chipset on a motherboard consists of integrated circuits that control how system hardware interacts with the CPU and motherboard. It also provides the capability and features needed, such as the maximum memory supported on the motherboard, multiple USB ports, eSATA connections, surround sound, and video.

8. Which memory module used to hold instructions for booting a PC and loading the OS, but is still used on adapters even though the memory contents cannot be changed?

- RAM
- **ROM**
- cache
- main memory

Explanation: ROM stands for read-only memory.

9. What is a characteristic of DDR SDRAM?

- **It transfers data twice per clock cycle compared to once per clock cycle for SDRAM.**
- DDR SDRAM modules have double the number of pins of SDRAM memory modules.

- It is dynamic memory whereas SDRAM is static memory.
- It operates at double the voltage of SDRAM memory.

Explanation: DDR SDRAM transfers data twice per clock cycle, whereas SDRAM transfers data once each clock cycle. Both DDR SDRAM and SDRAM are forms of dynamic memory. The difference in data transfer rate between DDR SDRAM and SDRAM is not determined by the number of pins, nor the operating voltage.

10. What are two safety hazards when dealing with laser printers? (Choose two.)

- **high voltage**
- **hot components**
- heavy metals
- proprietary power bricks
- unwieldy card cages

Explanation: Laser printers require high voltage when initially powered on and to charge the drum in preparation for writing data to the drum. This high voltage requirement is why most laser printers are not normally connected to a UPS. A laser printer also has a fuser assembly used to apply heat and pressure to the toner to permanently attach it to the paper. The laser printer must be unplugged and the fuser assembly must be allowed to cool before working inside the printer.

11. Which component requires a technician to install screws externally through the PC case?

- RAM
- CPU
- motherboard
- **power supply**

Explanation: The power supply commonly has four screws that attach from outside the case through case holes into screw holes on the power supply.

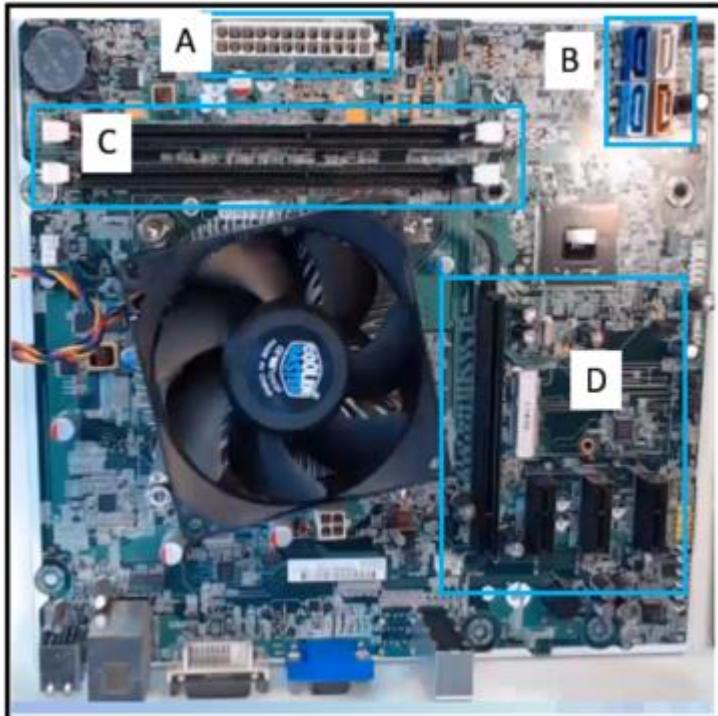
12. A technician is installing an internal HDD. To which motherboard connector will the technician connect the data cable?

- ATX
- PCI
- PWR_SW
- **SATA**

Explanation: Internal hard drives are commonly SATA drives that have a data cable that extends from the drive to a motherboard SATA connector..

13. Refer to the exhibit. A technician has been asked to install a video card. Which section of the motherboard will the technician use to install the

card?



- section A
- section B
- section C
- **section D**

Explanation: Graphics cards, also known as video cards, are installed into a PCIe x16 expansion slot. The expansion slots on a motherboard are located near the motherboard ports.

14. When a PC is being assembled, what component is connected to the motherboard with a SATA cable?

- **the optical drive**
- the network interface card
- the video card
- the power supply

Explanation: SATA cables, or serial ATA cables, are used to carry data from drives to the motherboard.

15. A technician is troubleshooting a computer that is experiencing hardware failure detected by the BIOS. What is one way this failure is indicated?

- The computer automatically boots into Safe Mode and displays a warning on the screen.
- The screen flashes with a red background and displays a warning message.
- **The computer emits a pattern of beeps indicating the failing device.**
- The computer returns an error message that indicates the I/O address of the failing device.

Explanation: Beep codes are a result of POST and these vary between computer vendors based on what BIOS is installed.

16. Which three features can be configured in the BIOS settings to secure a computer? (Choose three.)

- MAC filtering
- **drive encryption**
- **TPM**
- file encryption
- TKIP key
- **passwords**

Explanation: Passwords, drive encryption, and TPM are BIOS configurable security features. File encryption, TKIP key, and MAC filtering are security features not configured within BIOS.

17. What is the purpose of RAID adapters?

- to allow older PCI technology expansion slots to be used
- to provide enhanced audio and graphic capabilities
- **to connect multiple storage devices for redundancy or speed**
- to connect peripheral devices to a PC to improve performance

Explanation: RAID 0 allows “striping” or writing data across two hard drives, but provides no redundancy. The other RAID versions provide redundancy.

18. When a new motherboard is being installed, between which two components must thermal compound be applied? (Choose two.)

- **CPU**
- RAM
- chassis
- **heat sink**
- chipset
- motherboard

Explanation: You must apply thermal compound between the new CPU and the heat sink/fan assembly to avoid overheating the CPU. The thermal paste helps to conduct heat from the CPU to the heat sink.

19. What is the purpose of a Safety Data Sheet?

- **to specify procedures for dealing with potentially hazardous materials**
- to specify procedures in designing and building common computer systems
- to specify procedures for the operation of sensitive components and prevention of electrostatic discharge
- to specify procedures in the use of humidity control and prevention of moisture damage

Explanation: A Safety Data Sheet is a fact sheet that summarizes information about material identification, including hazardous ingredients that can affect personal health, fire hazards, and first-aid requirements. The SDS explains how to dispose of potentially hazardous materials in the safest manner.

20. Which negative environmental factor does cleaning the inside of a computer reduce?

- **dust**
- EMI
- rust
- ESD

Explanation: Accumulated dust inside the computer can prevent the flow of air and can hinder cooling.

21. What is a recommended procedure to follow when cleaning computer components?

- Remove the CPU before cleaning.
- Blow compressed air on cooling fans so that they will spin when dust is being removed.
- Use window cleaner on LCD screens.
- **Hold cans of compressed air upright while spraying.**

Explanation: When using compressed air, keep the can upright to prevent the fluid from leaking onto computer components.

22. On the production floor, a furniture plant has laptops for process monitoring and reporting. The production floor environment is around 80 degrees Fahrenheit (27 degrees Celsius). The humidity level is fairly high around 70 percent. Fans are mounted in the ceiling for air circulation. Wood dust is prevalent. Which condition is most likely to adversely affect a laptop that is used in this environment?

- the temperature
- the humidity
- the air flow
- **the dust**

Explanation: Most laptops are created to be tolerant of a wide range of humidity levels and room temperatures. Dust, however, can cause overheating and failures.

23. After a technician tests a theory of probable causes, what two actions should the technician take if the testing did not identify an exact cause? (Choose two.)

- **Establish a new theory of probable causes.**
- Randomly replace components one at a time until the problem is solved.
- **Document each test tried that did not correct the problem.**
- Verify full system functionality.
- Test all remaining possible causes starting with the most complex.

Explanation: If the exact cause of the problem has not been determined after you have tested all your theories, establish a new theory of probable causes and test it.

24. What would happen if a PC that contains a power supply that does not automatically adjust for input voltage is set to 230 volts and attaches to an outlet in the United States?

- The power supply would explode.
- **The PC would not turn on.**
- The PC would display an error code.
- The PC would emit a series of beeps.

Explanation: In the United States, the wall outlet electrical power is standardized at 120 volts AC.

25. Which type of network spans a single building or campus and provides services and applications to people within a common organizational structure?

- PAN
- WAN
- **LAN**
- MAN

Explanation: A LAN is smaller or more contained than a WAN, which can span several cities. A MAN is usually contained in one city. A PAN is a very small network of devices that are located in close proximity to one another, usually within range of a single person.

26. What are two types of wired high-speed Internet connections? (Choose two.)

- **cable**
- satellite
- cellular
- **DSL**
- dial-up

Explanation: Cable and DSL Internet technologies both use physical cabling to provide an Internet connection to a residence or a small business. Although dial-up is a wired technology, it does not provide a high-speed Internet connection. Satellite and cellular connections provide a wireless Internet connection.

27. In what two situations would UDP be better than TCP as the preferred transport protocol? (Choose two.)

- when applications need to guarantee that a packet arrives intact, in sequence, and unduplicated
- **when a faster delivery mechanism is needed**
- when delivery overhead is not an issue
- **when applications do not need to guarantee delivery of the data**
- when destination port numbers are dynamic

Explanation: UDP is a very simple transport layer protocol that does not guarantee delivery. Devices on both ends of the conversation are not required to keep track of the conversation. UDP is used as the transport protocol for applications that need a speedy, best-effort delivery.

28. The current IP configuration of a small company is done manually and is time-consuming. Because of increased network growth, a technician needs a simpler way for IP configuration of workstations. Which service would simplify the workstation IP configuration task?

- APIPA
- **DHCP**
- DNS
- ICMP

Explanation: In networks with more than a few hosts, DHCP simplifies the addressing process. A DHCP server automatically assigns host IP addresses.

29. A company is looking for a next-generation firewall that provides VPN functionality, IDS/IPS functionality, and DoS/DDoS protection. Which device would be best suited for this task?

- multipurpose device
- router
- endpoint management server
- **UTM**
- TPM

Explanation: A universal threat management (UTM) device is a security device that can provide firewall, IDS/IPS, and proxy server functionality as well as email filtering and DoS/DDoS protection.

30. A student is helping a friend with a home computer that can no longer access the Internet. Upon investigation, the student discovers that the computer has been assigned the IP address 169.254.100.88. What could cause a computer to get such an IP address?

- static IP addressing with incomplete information
- interference from surrounding devices
- reduced computer power supply output
- **unreachable DHCP server**

Explanation: When a PC does not have a static IP address or cannot pick one up from a DHCP server, Windows will automatically assign the PC an IP address using APIPA, that uses the range of addresses 169.254.0.0 to 169.254.255.255.

31. What three values must be added to the IPv4 properties of a NIC in order for a computer to have basic connectivity with the network? (Choose three.)

- **subnet mask**
- DHCP server address
- domain name
- **default gateway**
- speed and duplex
- **IP address**

Explanation: The IP address, subnet mask, and default gateway address values should be added to the NIC properties in order for the computer to have basic network connectivity. This can be done either statically or dynamically

with DHCP. An additional value that should be present if the computer is to be used to connect to the Internet is the DNS server value. A computer automatically attempts to locate a DHCP server if configured to do so. A DHCP server address is not used. Finally, NAT is configured on a router, not on a computer host, and speed and duplex settings are NIC hardware settings and not IPv4 properties of the NIC.

**32. A device has an IPv6 address of
2001:0DB8:75a3:0214:0607:1234:aa10:ba01 /64. What is the host identifier of the device?**

- 2001:0DB8:75a3
- **0607:1234:aa10:ba01**
- 2001:0DB8
- ba01

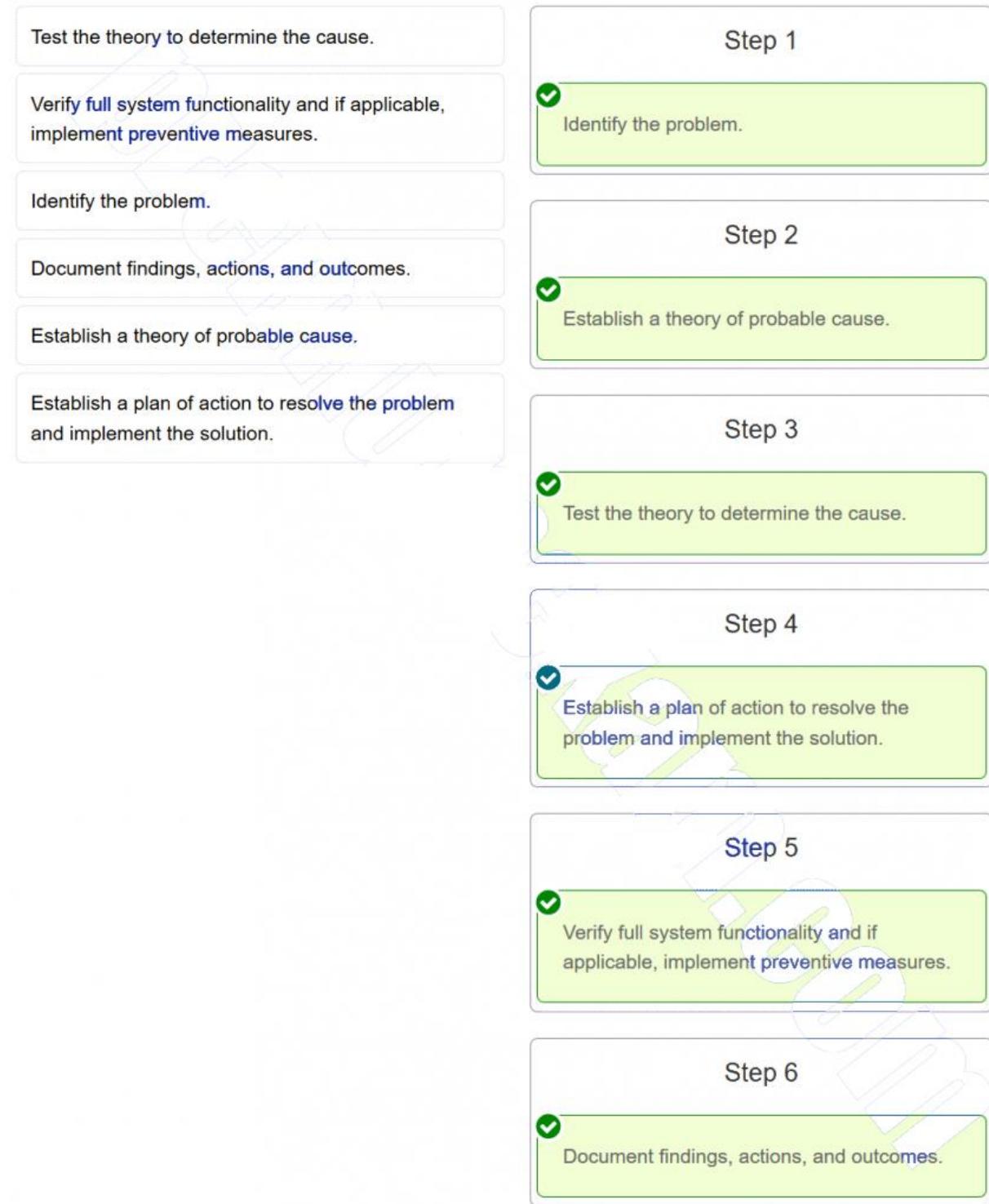
Explanation: An IPv6 address is made up of 128 bits that are represented as eight blocks of four hexadecimal digits that are called hextets. Because each hexadecimal digit represents four bits, each hextet represents 16 bits. The /64 network prefix indicates that the first 64 bits, or first four hextets, represent the network portion of the address. Because there are 128 bits in an IPv6 address, this leaves the last 64 bits, or last four hextets, to represent the host identifier. The value for the last four hextets is 0607:1234:aa10:ba01.

33. How can a user prevent specific applications from accessing a Windows computer over a network?

- Enable MAC address filtering.
- Disable automatic IP address assignment.
- **Block specific TCP or UDP ports in Windows Firewall.**
- Change default usernames and passwords.

Explanation: Network applications have specific TCP or UDP ports that can be left open or blocked in Windows Firewall. Disabling automatic IP address assignment may result in the computer not being able to connect to the network at all. Enabling MAC address filtering is not possible in Windows and would only block specific network hosts, not applications. Changing default usernames and passwords will secure the computer from unauthorized users, not from applications.

34. Place the six stages of the troubleshooting process in the correct order.



35. A technician has been asked to configure Wi-Fi calling on a corporate mobile device. In which situation would this feature be most advantageous?

- in an emergency situation and no minutes are left on the phone
- when sending WEA updates
- **when in an area with poor cellular coverage**
- in a store transaction making a payment using the mobile device

Explanation: Wi-Fi calling is not supported on all mobile devices, but when enabled, it uses a Wi-Fi network to make voice calls. It is very useful in areas with poor cellular coverage.

36. Which statement is true about laptops?

- **Most of the internal components that are designed for laptops cannot be used for desktops.**
- Laptop motherboards have standard form factors.
- Laptops use fewer components than desktops use.
- Laptop CPUs do not use cooling devices.

Explanation: Laptop internal components are designed with a small form factor and are proprietary. Although a laptop CPU uses less power, it needs a cooling device (heat sink and fan).

37. Which standard provides a bridge between laptop hardware and the operating system and a way for technicians to configure power management schemes to get the best performance?

- **ACPI**
- PCIe
- Bluetooth
- 802.11

Explanation: The Advanced Configuration and Power Interface (ACPI) standard has specific sleep states that can be assigned to a device in order to conserve power. PCIe is a motherboard interface. Bluetooth and 802.11 are wireless standards.

38. Which two laptop components are considered replaceable by the customer. (Choose two.)

- **battery**
- integrated card reader
- mini PCIe module
- **RAM**
- display

Explanation: Customer-replaceable units (CRUs) do not typically require a lot of technical skill to replace. RAM and a battery are two examples of a CRU. In contrast, a field-replaceable unit (FRU), such as a display, motherboard, keyboard, or touchpad, commonly requires a technician to install.

39. A user wants to synchronize some apps, movies, music, and ebooks between mobile devices. What are the two types of connections used to synchronize this type of data? (Choose two.)

- cellular
- **Wi-Fi**
- **USB**
- Bluetooth
- NFC

Explanation: Because of the amount of data transferred during video synchronization, synchronization occurs through either a Wi-Fi connection or a wired USB connection.

40. A technician is explaining the differences between inkjet printers and laser printers to a customer. Which two comparisons should the technician make? (Choose two.)

- Inkjet printers are less expensive as an initial purchase than laser printers.
- A laser printer is significantly slower than an inkjet printer.
- Both laser and inkjet printers produce poor quality images.
- The laser printer output is dry after printing, but an inkjet printer may still have wet ink on the paper after printing.
- Inkjet printers use plain paper to make economical prints, but laser printers require more expensive thermal paper.

41. A user chooses the collate option and prints two copies of a three-page document. What is the order in which the pages are printed?

- pages 1, 1, 2, 2, 3, 3
- **pages 1, 2, 3, 1, 2, 3**
- pages 3, 3, 2, 2, 1, 1
- pages 3, 2, 1, 3, 2, 1

Explanation: The collate feature enables a printer to sort multiple copies of a document with the proper page order for each copy.

42. A color laser printer is used to print documents with graphics and photographs. Users are complaining that printing takes too long. Which component of the printer should be upgraded in order to improve printing performance?

- CPU
- **RAM**
- hard drive
- toner cartridges

Explanation: Because documents with graphics and photographs generate much larger print jobs, the printing process will run more efficiently if the printer memory is adequate to store the entire job before the job starts.

43. What service is available for Windows to provide software print server services to MAC OS clients?

- **Bonjour Print Server**
- Print to XPS
- Apple AirPort Extreme
- Apple AirPrint

Explanation: Bonjour Printer Server from Apple comes with MAC OS X and is a free download for Windows users to be used as a software print server. Airport Extreme, a dedicated print server, and a PC with a printer attached serving as a print server are all hardware print sharing solutions.

44. Which three components are typically found in laser printer maintenance kits? (Choose three.)

- **fuser assembly**
- primary corona
- **pickup rollers**
- **transfer rollers**
- secondary corona
- paper trays

Explanation: Laser printer maintenance kits typically contain components that wear and can be installed with minimal disassembly of the printer. Corona wires are internal components that would require a trained technician to replace. Paper trays are components that are not typically replaced during maintenance, but would be replaced any time if damaged.

45. A technician is installing a new printer in a cool, damp environment. After the printer cabling is done, and the software and print driver are installed, the printer test page jams. What is the most likely cause of the print failure?

- incorrect printer driver
- **too much humidity**
- not enough printer memory
- loose printer cables

Explanation: Paper jams are commonly caused when the paper being used is dirty, affected by humidity, or is the wrong type of paper for the printer.

46. A data center has recently updated a physical server to host multiple operating systems on a single CPU. The data center can now provide each customer with a separate web server without having to allocate an actual discrete server for each customer. What is the networking trend that is being implemented by the data center in this situation?

- BYOD
- **virtualization**
- maintaining communication integrity
- online collaboration

Explanation: Virtualization technology can run several different operating systems in parallel on a single CPU.

47. How does virtualization help with disaster recovery within a data center?

- Power is always provided.
- Less energy is consumed.
- Server provisioning is faster.
- **Hardware does not have to be identical.**

Explanation: Disaster recovery is how a company goes about accessing applications, data, and the hardware that might be affected during a disaster. Virtualization provides hardware independence which means the disaster recovery site does not have to have the exact equipment as the equipment in

production. Server provisioning is relevant when a server is built for the first time. Although data centers do have backup generators, the entire data center is designed for disaster recovery. One particular data center could never guarantee that the data center itself would never be without power.

48. Which two hypervisors are suitable to support virtual machines in a data center? (Choose two.)

- Virtual PC
- VMware Fusion
- **VMware ESX/ESXi**
- Oracle VM VirtualBox
- **Microsoft Hyper-V 2012**

Explanation: VMware ESX/ESXi and Microsoft Hyper-V 2012 are Type 1 hypervisors that have direct access to the hardware resources. Type 1 hypervisors are more efficient than hosted architectures, and enable greater scalability, performance, and robustness. They are used to support enterprise VMs in data centers. Oracle VM VirtualBox, VMware Fusion, and Microsoft Virtual PC are host based Type 2 hypervisors.

49. A web designer accesses a company Windows 10 computer remotely. The designer often needs to simultaneously open multiple applications, such as a web page editor and a graphics editor. Rather than opening them in multiple windows, the designer opens them in different virtual desktops. What technology is being used by the designer?

- virtual reality
- **Windows Virtual Desktop**
- cloud-based applications
- virtual desktop infrastructure

Explanation: Windows 10 has a feature called Windows Virtual Desktop (WVD). A user can create multiple virtual desktops and navigate among them easily. This feature reduces the clutter on a desktop of Windows caused by opening multiple applications. With WVD, a user can have each application open in a separate desktop.

50. Which Cloud computing service would be best for an organization that needs to collaboratively create applications and deliver them over the web?

- **PaaS**
- IaaS
- SaaS
- ITaaS

Explanation: Platform as a service (PaaS) provides a collaborative environment where multiple developers can create software and host an application through a Cloud provider.

51. Which statement describes a feature of SDRAM?

- It requires constant power to function.
- Its connector always has 240 pins.
- **It can process overlapping instructions in parallel.**

- It is able to support two writes and two reads per CPU clock cycle.

Explanation: SDRAM (Synchronous Dynamic RAM) works in synchronization with the memory bus and has higher transfer rates because it can process overlapping instructions in parallel.

52. Match the memory type to the feature. (Not all options are used.)

DDR SDRAM	It's connector has 288 pins and has advanced error correction features available.
DDR3 SDRAM	
GDDR SDRAM	
DDR2 SDRAM	
DDR4 SDRAM	
	It's connector has 184 pins and is able to support two writes and two reads per CPU clock cycle.
	It's connector has 240 pins and consumes 1.5 Volts of power.
	It's connector has 240 pins and consumes 1.8 Volts of power.

- It's connector has 288 pins and has advanced error correction features -> **DDR4 SDRAM**
- It's connector has 184 pins and is able to support two writes and two reads per CPU clock cycle. -> **DDR SDRAM**
- It's connector has 240 pins and consumes 1.5 Volts of power. -> **DDR3 SDRAM**
- It's connector has 240 pins and consumes 1.8 Volts of power. -> **DDR2 SDRAM**

53. A technician is troubleshooting a server that displays the error message “RAID not found” after a power outage over the weekend. What is a possible cause for this?

- The BIOS firmware needs updating.

- The FSB settings have changed and are wrong.
- **The external RAID controller is not receiving power.**
- The CPU multiplier is set too high.

Explanation: The loss of the RAID controller can be caused by the external RAID controller not receiving power, incorrect BIOS settings, failure of the RAID controller or incorrect drivers for the RAID controller.

54. A customer brings in a laptop with a touch screen that is not working correctly. The touch screen either does not respond at all or provides unusual or inaccurate responses. What is a possible cause for such behavior?

- The battery is not seated properly.
- The DC jack is not grounded or is loose.
- The digitizer is faulty.
- **Too many apps are open.**

Explanation: A touch screen that is unresponsive or inaccurate can be caused by dirt or grease on the screen, the screen protector, or apps consuming too many resources.

55. What are two security risks associated with sharing printers in a corporate environment? (Choose two.)

- **user authentication**
- **cached files**
- document viewing in the print queue
- dumpster diving
- shoulder surfing

Explanation: Three security concerns related to shared printers include (1) cached print files could contain sensitive data; (2) user authentication is needed to control access to the printer; and (3) print jobs could be read by others, intercepted, copied, or modified. Although the names of documents can be viewed in the print queue, document viewing is not possible. Dumpster diving and shoulder surfing are security concerns whether the printer is shared or not.

56. Which change management process component is concerned with the business processes that are affected by changes?

- **assessment**
- approval
- implementation
- identification

Explanation: There are several change management process components that help changes, installations, and upgrades go more easily. The assessment component identifies the business processes that are affected and the costs and resources required.

57. Match the problem to the possible solution. (Not all options are used.)

The PCI NIC adapter card has stopped working.

Replace the motherboard.

The computer does not display any video after installing a new PCIe video card.

The motherboard capacitors are distended, swollen, emitting residue, or bulging.

The user can hear the fans spinning but the PC will not start and there are no beeps from the speaker.

Check for faulty cable, damaged or mis-seated CPU or other motherboard component prior to replacing the motherboard if required.

The motherboard capacitors are distended, swollen, emitting residue, or bulging.

The user can hear the fans spinning but the PC will not start and there are no beeps from the speaker.

After upgrading the single core CPU to a dual core CPU only one CPU graph is seen in the task manager.

Update the BIOS firmware.

After upgrading the single core CPU to a dual core CPU only one CPU graph is seen in the task manager.

Connect the auxiliary power cable for the adapter card.

The computer does not display any video after installing a new PCIe video card.

58. A computer technician is installing a RAID. If the RAID uses mirroring and striping, which RAID level is the technician using?

- **10**
- 5
- 1
- 8

59. A computer technician is installing a RAID. If the RAID uses mirroring, which RAID level is the technician using?

- **1**
- 6
- 5
- 3

60. A computer technician is installing a RAID. If the RAID uses striping with parity, which RAID level is the technician using?

- 5
- 6
- 1
- 4

61. A computer technician is installing a RAID. If the RAID uses striping, which RAID level is the technician using?

- 0
- 6
- 5
- 2

62. A computer technician is installing a RAID. If the RAID uses striping with double parity, which RAID level is the technician using?

- 6
- 1
- 5
- 7

63. A technician is upgrading many PCs used within the company. How should the technician dispose of an old battery?

- **Recycle following local regulations.**
- Throw it away.
- Take it to the garbage dump.
- Burn it.

64. A technician is upgrading many PCs used within the company. How should the technician dispose of a broken monitor?

- Bury it.
- Take it to the garbage dump.
- **Recycle following local regulations.**
- Burn it.

65. A technician is upgrading many PCs used within the company. How should the technician dispose of an old power supply?

- Burn it.
- Take it to the garbage dump.
- Bury it.
- **Recycle following local regulations.**

66. A technician is upgrading many PCs used within the company. How should the technician dispose of old RAM?

- Destroy it with a hammer.
- Burn it.
- **Recycle following local regulations.**
- Bury it.

67. A technician is upgrading many PCs used within the company. How should the technician dispose of an old motherboard?

- Seal in a plastic bag before putting in the garbage.
- Give it to your neighbor.

- **Recycle following local regulations.**
- Destroy it with a hammer.

68. A technician is upgrading many PCs used within the company. How should the technician dispose of an old hard drive?

- **Recycle following local regulations.**
- Seal in a cardboard box.
- Give it to your neighbor.
- Destroy it with a hammer.

69. After continuous morning use, a computer suddenly reboots without the intervention of the user. What are the two most likely hardware parts that could cause this problem? (Choose two.)

- **CPU**
- hard drive
- RAID
- BIOS
- **power supply**
- wireless NIC

70. A technician has been called in to investigate a problem with the computer rebooting randomly throughout the day. What two pieces of hardware could cause this problem? (Choose two.)

- **power supply**
- surge strip
- ROM
- wireless NIC
- motherboard
- **CPU**

71. For two days in a row, a user has noticed that the computer reboots several times before it eventually starts. What are two suspect components? (Choose two.)

- **power supply**
- BIOS
- ROM
- **CPU**
- wireless NIC
- motherboard

72. While a user is working on a spreadsheet, the computer reboots. What are two components that could cause this issue? (Choose two.)

- **CPU**
- ROM
- **power supply**
- BIOS
- RAID
- wireless NIC

73. A client packet is received by a server. The packet has a destination port number of 137. What service application is the client requesting?

- SMB/CIFS

- HTTPS
- **NetBIOS (NetBT)**
- SLP

74. A client packet is received by a server. The packet has a destination port number of 22. What service application is the client requesting?

- **SSH**
- SMB/CIFS
- HTTPS
- SLP

75. A client packet is received by a server. The packet has a destination port number of 143. What service application is the client requesting?

- **IMAP**
- SMB/CIFS
- HTTPS
- SLP

76. A client packet is received by a server. The packet has a destination port number of 23. What service application is the client requesting?

- SMB/CIFS
- **Telnet**
- HTTPS
- SLP

77. A client packet is received by a server. The packet has a destination port number of 161. What service application is the client requesting?

- SMB/CIFS
- HTTPS
- SLP
- **SNMP**

78. A client packet is received by a server. The packet has a destination port number of 389. What service application is the client requesting?

- **LDAP**
- SMB/CIFS
- HTTPS
- SLP

79. A client packet is received by a server. The packet has a destination port number of 25. What service application is the client requesting?

- SMB/CIFS
- HTTPS
- **SMTP**
- SLP

80. A client packet is received by a server. The packet has a destination port number of 427. What service application is the client requesting?

- SMB/CIFS
- SMTP
- DNS
- **SLP**

81. A client packet is received by a server. The packet has a destination port number of 53. What service application is the client requesting?

- **DNS**
- SMTP
- DHCP
- TFTP

82. Which is the compressed format of the IPv6 address

2001:0db8:0000:0000:0000:a0b0:0008:0001?

- 2001:db80:0:1::80:1
- 2001:db8::ab8:1:0:1000
- **2001:db8::a0b0:8:1**
- 2001:db80::1::80:1

83. Which is the compressed format of the IPv6 address

fe80:09ea:0000:2200:0000:0000:0fe0:0290?

- fe80:9:20::b000:290
- fe80:9ea0::2020:0:bf:e0:9290
- fe80:9ea0::2020::bf:e0:9290
- **fe80:9ea:0:2200::fe0:290**

84. Which is the compressed format of the IPv6 address

2002:0042:0010:c400:0000:0000:0000:0909?

- 200:420:110:c4b::910:0:90
- **2002:42:10:c400:909**
- 2002:4200::25:1090:0:99
- 2002:42::25:1090:0:99

85. Which is the compressed format of the IPv6 address

2002:0420:00c4:1008:0025:0190:0000:0990?

- 2002:4200::25:1090:0:99
- 2002:42:10:c400::909
- **2002:420:c4:1008:25:190::990**
- 2002:42::25:1090:0:99

86. Which is the compressed format of the IPv6 address

2001:0db8:0000:0000:0ab8:0001:0000:1000?

- 2001:db8::a0b0:8:1
- **2001:db8::ab8:1:0:1000**
- 2001:db8:1::ab8:0:1
- 2001:db8:0:1::8:1

87. Which is the compressed format of the IPv6 address

fe80:0000:0000:0000:0220:0b3f:f0e0:0029?

- **fe80::220:b3f:f0e0:29**
- fe80:9ea0::2020:0:bf:e0:9290
- fe80:9ea:0:2200::fe0:290
- fe80:9ea0::2020::bf:e0:9290

88. Which is the compressed format of the IPv6 address

fe80:9ea0:0000:2020:0000:00bf:00e0:9290?

- **fe80:9ea0::2020:0:bf:e0:9290**
- fe80:9:20::b000:290

- fe80:9ea:0:2200::fe0:290
- fe80::0220:0b3f:f0e0:0029

89. What ACPI power state describes when the CPU and RAM are off and the contents of RAM have been saved to a temporary file on the hard drive?

- S1
- S2
- S3
- **S4**

90. What ACPI power state describes when the CPU and RAM are still receiving power but unused devices are powered down?

- **S1**
- S2
- S3
- S4

91. What ACPI power state describes when the CPU is off, but the RAM is refreshed?

- S1
- **S2**
- S3
- S4

92. What ACPI power state describes when the computer is off?

- S1
- S2
- S3
- **S5**

93. What ACPI power state describes when the CPU is off and the RAM is set to a slow refresh rate, often called suspend mode?

- **S3**
- S4
- S2
- S5

94. What ACPI power state describes when the computer is on and the CPU is running?

- **S0**
- S4
- S3
- S5

95. A reporter is trying to print several high resolution photographs but the color laser printer is going extremely slowly. What should the technician do to resolve the issue?

- Rewind the ribbon.
- **Add more RAM to the printer.**
- Connect the printer using wireless.
- Install a USB hub.
- Update the BIOS.

96. A new printer has just been installed deep in a mine. When test pages are printed, the paper constantly jams. What should the technician do to resolve the issue?

- Clean the printer.
- Connect the printer using wireless.
- Install a USB hub.
- **Move the printer to a less-humid location.**
- Update the BIOS.

97. A user complains that recently every printed document has vertical lines and streaks on the paper. What should the technician do to resolve the issue?

- Clean the printer.
- Connect the printer using wireless.
- Install a USB hub.
- **Distribute the toner more evenly within the cartridge.**
- Update the BIOS.

98. A school is installing a new shared printer but the printer is not showing up on the list of available printers. What should the technician do to resolve the issue?

- Reset the page counter.
- Connect the printer using wireless.
- Install a USB hub.
- **Manually add the printer IP address.**
- Update the BIOS.

99. Employees are complaining that they send print jobs to a newly installed printer but the print jobs never print. What should the technician do to resolve the issue?

- Check the vibration of the crystals.
- Connect the printer using wireless.
- Install a USB hub.
- Update the BIOS.
- **The printer is connected to the wrong port. Modify the port.**

100. Users have noticed that the colors on their printed documents are different from the colors that they see on their computer screens. What should the technician do to resolve the issue?

- **Calibrate the printer.**
- Install a USB hub.
- Reset the page counter.
- Check the vibration of the crystals.
- Connect the printer using wireless.

101. A technician has just completed a preventive maintenance on the department printer. Users are now complaining that the printer is no longer available. What should the technician do to resolve the issue?

- **Check that the printer is plugged into a power source.**
- Connect the printer using wireless.
- Reset the page counter.

- Check the vibration of the crystals.
- Install a USB hub.

102. Employees of a small business are complaining that the printer is printing faded images. What should the technician do to resolve the issue?

- Update the BIOS.
- **Replace the toner cartridge.**
- Reset the page counter.
- Check the vibration of the crystals.
- Install a USB hub.

103. A photographer is complaining about the following printer issue: The printer issues a “Document failed to print” message. What are two possible causes of this issue? (Choose two.)

- **The printer is no longer shared.**
- The paper tray is flimsy.
- The laser printer is emitting too much radiation.
- **A cable is loose or disconnected.**
- The wrong printer type has been selected.

104. A reporter is complaining about the following printer issue: The printer is printing unknown characters. What are two possible causes of this issue? (Choose two.)

- **The wrong or an outdated printer driver is installed.**
- **The printer has a loose connection.**
- The laser printer is emitting too much radiation.
- The printer has been installed on the wrong port.
- The paper tray is flimsy.

105. A manager is complaining about the following printer issue: The printer is printing incorrect colors. What are two possible causes of this issue? (Choose two.)

- **The print heads might need to be cleaned and calibrated.**
- The printer is using the wrong cable.
- **An incorrect cartridge could be installed.**
- The printer has been installed on the wrong port.
- The paper tray is flimsy.

106. A technician is complaining about the following printer issue: The print appears faded on the paper. What are two possible causes of this issue? (Choose two.)

- **The toner cartridge is low.**
- The wrong printer type has been selected.
- The printer has been installed on the wrong port.
- **The paper might be incompatible with the printer.**
- The paper tray is flimsy.

107. A librarian is complaining about the following printer issue: The printer control panel displays no image. What are two possible causes of this issue? (Choose two.)

- The room temperature is above normal.
- The printer has been installed on the wrong port.

- **The contrast of the screen may be set too low.**
- **The printer is not turned on.**
- The paper tray is flimsy.

108. A teacher is complaining about the following printer issue: The paper is creased after printing. What are two possible causes of this issue?

(Choose two.)

- Print jobs are being sent to the wrong printer.
- The printer has been installed on the wrong port.
- The paper tray is flimsy.
- **The paper-feed tray might not be firmly adjusted against the edges of the printer.**
- **The paper might be loaded incorrectly.**

109. A receptionist is complaining about the following printer issue: My impact printer produces faded or light characters. What are two possible causes of this issue? (Choose two.)

- **The ribbon may be worn out.**
- The print queue is overloaded.
- The printer has been installed on the wrong port.
- **The ribbon may be damaged.**
- The paper tray is flimsy.

110. A photographer is complaining about the following printer issue: The paper is not being fed into the printer. What are two possible causes of this issue? (Choose two.)

- **The paper may be wrinkled.**
- The paper tray is flimsy.
- The printer has been installed on the wrong port.
- The printer service is stopped or not working properly.
- **The printer could be set to print to a different paper size than is currently loaded.**

111. A laptop has an NVMe drive (C:) and a mechanical hard drive (D:). When the user tries to save a spreadsheet to the D: drive, the user notices that the D: drive is not there. What should the technician do to see if the drive is recognized by the operating system?

- Use the Msconfig utility.
- Boot into UEFI/BIOS and see if the drive appears.
- **Use the Disk Management Control Panel.**
- Remove the drive and attach it to the SATA port used by the SSD.
Reboot the computer and see if the drive is recognized.

112. A computer has two mechanical hard drives. The second drive (D:) is used for data storage. When trying to save an email attachment to the local hard drive, the user notices that the D: drive is not an option. What should the technician do to see if the drive is recognized by the operating system?

- **Use File Explorer.**
- Swap the data cables of the mechanical drive and the SSD.
- Open a web browser and type the following: <http://127.0.0.1>. Verify if both drives appear in the list.

- Bring up a command prompt and type ipconfig.

113. A user reports that a drive is no longer there. The technician asks the user to demonstrate the problem. Within the application, the user demonstrates that the drive, that was present in the save options yesterday, is now no longer an option. What should the technician do to see if the drive is recognized by the operating system?

- Check the Startup folder.
- Bring up a command prompt and type ipconfig.
- **Use Device Manager.**
- Swap the data cables of the mechanical drive and the SSD.

114. A computer has an SSD for the operating system and applications and uses another mechanical hard drive for data storage. The user reports that data can no longer be saved to the mechanical hard drive. What should the technician do to see if the drive is recognized by the operating system?

- **Use File Explorer.**
- Swap the data cables of the mechanical drive and the SSD.
- Open a web browser and type the following: <http://127.0.0.1>. Verify if both drives appear in the list.
- Bring up a command prompt and type ipconfig.

Case 2:

- Open a web browser and type the following: <http://127.0.0.1>. Verify if both drives appear in the list.
- Remove the drive and attach it to the SATA port used by the SSD. Reboot the computer and see if the drive is recognized.
- Bring up a command prompt and type ipconfig.
- **Use Device Manager.**

115. A technician is working on a laptop and the GPS is not functioning.

What is a probable cause for this situation?

- The GPU is overheating.
- The screen resolution needs recalibration.
- **A service is disabled.**
- The screen refresh rate is too low.

116. A technician is working on a laptop and an app is not loading. What is a probable cause for this situation?

- More than one app is open simultaneously.
- The screen resolution needs recalibration.
- The screen refresh rate is too low.
- **An app needs to be restarted.**

117. A technician is working on a laptop and an app is not responding. What is a probable cause for this situation?

- **An app needs to be restarted.**
- The battery is low.
- The GPU is overheating.
- Wi-Fi is turned off.

118. A technician is working on a laptop and an error message about decryption appears when opening an email. What is a probable cause for this situation?

- The display setting is incorrect.
- The GPU is overheating.
- **A digital certificate is missing.**
- Wi-Fi is turned off.

119. Students who use the same printer are complaining that recently printed documents contain unknown characters. What should the technician do to resolve the issue?

- **Re-install the printer driver.**
- Power cycle the printer.
- Check the vibration of the crystals.
- Install a USB hub.
- Reset the page counter.

120. An office assistant in a law firm is trying to print many large legal documents but is getting “memory overload” error messages from the printer. What should the technician do to resolve the issue?

- Replace the pickup roller.
- Check the vibration of the crystals.
- Install a USB hub.
- Connect the printer using wireless.
- **Add more memory to the printer.**

121. A technician is working on a laptop and the GPS is not functioning. What is a probable cause for this situation?

- **Airplane mode is turned on.**
- The screen refresh rate is too low.
- Wi-Fi is turned off.
- The screen resolution needs recalibration.

122. A technician is working on a laptop and the GPS is not functioning. What is a probable cause for this situation?

- The screen refresh rate is too low.
- The GPU is overheating.
- **Airplane mode is turned on.**
- The screen resolution needs recalibration.

123. A user is complaining that the printer is printing pages with no image on them. What should the technician do to resolve the issue?

- **Replace the toner cartridge.**
- Rewind the ribbon.
- Clean the printer.
- Reset the page counter.
- Check the vibration of the crystals.

124. A software engineer is involved in the development of an application. For usability tests, the engineer needs to make sure that the application will work in both Windows 10 Enterprise and Windows 11 environments. The features and functions must be verified in the actual OS environment. The

engineer is using a Windows 10 Pro workstation. What two technologies can help the engineer achieve the usability tests? (Choose two.)

- **dual boot**
- two separate CPUs
- storage redundancy
- **client-side virtualization**
- two separate hard disks

Explanation: Client-side virtualization enables a host OS to provide a virtual environment within which a guest OS can be installed and be operational as an actual OS. The dual boot configuration will provide an option to run either OS (but not both at the same time). Just using two disks is not a sufficient solution to run two separate OS.

125. Which protocol is used by Windows for file and printer sharing?

- **SMB**
- SMTP
- HTTPS
- IMAP

Explanation: SMB (Server Message Block) is the protocol used for file and printer sharing by Windows. SMTP and IMAP are protocols used in email services. HTTPS is the protocol used for secure web browsing.

126. Which laptop LCD technology uses tilting crystals to provide a much higher contrast ratio than other types?

- **Vertical alignment (VA)**
- In-Plane switching (IPS)
- Twisted Nematic (TN)
- Organic light-emitting diode (OLED)

Explanation: Vertical alignment (VA) laptop display technology uses tilting crystals to provide a much higher contrast ratio than other types. In-Plane switching (IPS) and Twisted Nematic (TN) do not have this feature. Organic light-emitting diode (OLED) displays are not used in laptops.

127. What is the purpose of the Server Message Block (SMB) protocol on Windows networks?

- web browsing
- desktop management
- **file sharing**
- email services

Explanation: Server Message Block or Common Internet File System allow for sharing of files, printers, and other resources between nodes on a network.

**IT Essentials 7.0 8.0 Final Exam (Chapters 10-14)
Answers Full**

1. Match the Windows 10 boot sequence after the boot manager (bootmgr.exe) loads.



NEW (Version 8.0):

Match the Windows 10 boot sequence after the boot manager (bootmgr.exe) loads.



Place the options in the following order:

the Windows boot loader winload.exe loads	Step one
ntoskrnl.exe and hal.dll are loaded	Step two
winload.exe is loaded	Step three
ntoskrnl.exe loads and executes	Step four
winlogon.exe is loaded and executes the logon process	Step five

2. Match the correct API with its function within the Windows 10 environment.

Windows APIs	This is a cross-platform standard specification for multimedia graphics.
DirectX	This is a collection of APIs related to multimedia tasks for Microsoft Windows.
Open Graphics Library (OpenGL)	This allows applications from older versions of Windows to operate on newer versions.
Java APIs	This is a collection of APIs related to the development of Java programming.

3. Which two tools are available to transfer user data and settings from an old Windows computer to a Windows operating system on a new computer? (Choose two.)

- **Windows Easy Transfer**
- Windows User Manager
- Windows Upgrade Assistant
- Windows Upgrade Advisor
- **User State Migration tool**

Explanation: When a new operating system is being installed, existing user data and settings need to be migrated from the old to the new operating system. The User State Migration Tool and the Windows Easy Transfer Tool are available to perform this task on the Windows Vista, 7, and 8 operating systems.

4. A user wants to extend a primary partition formatted with the NTFS file system with the unallocated space on the hard disk. What must the user do after the primary partition is extended to make it usable?

- **Convert the disk type to dynamic.**
- Ensure that the disk type is basic.
- Format the disk with the FAT64 file system.
- Partition the new space as a basic disk.

Explanation: A partition must be formatted with the NTFS file system in order to extend it by using the unallocated space on the disk. Once the partition has been extended, the disk type must be converted to a dynamic disk in order for the new partition to be accessible.

5. Why is a full format more beneficial than a quick format when preparing for a clean OS installation?

- A full format is the only method of installing Windows 8.1 on a PC that has an operating system currently installed.
- **A full format will delete files from the disk while analyzing the disk drive for errors.**
- A full format will delete every partition on the hard drive.
- A full format uses the faster FAT32 file system, whereas a quick format uses the slower NTFS file system.

Explanation: A full format removes files from a partition while scanning the disk for bad sectors. A quick format will remove files from a partition but does not scan a disk for bad sectors.

6. A technician wishes to prepare the computers in the network for disaster recovery. The network consists of a variety of desktops and laptops from different vendors. All the computers are running either a 32-bit version of Windows 10 Pro or a 64-bit version of Windows 10 Pro. How would the technician prepare the recovery media?

- Prepare one 64-bit recovery disc for all the computers.
- Prepare one 32-bit recovery disc for all the computers.
- **Prepare individual recovery discs for all the computers.**
- Prepare one image restore for all the computers.

Explanation: All the PCs are from different vendors and thus have dissimilar hardware configurations. Furthermore, all the PCs have a variety of 32-bit Windows 10 and 64-bit Windows 10. Because the PCs have different versions of the OS and dissimilar hardware, you cannot use the same image on all the PCs. In order to use a single image, Sysprep must be used to strip out machine specific information like the SID, and all PCs must have the same hardware configuration and the same version of the Windows operating system.

7. A technician wishes to deploy Windows 10 Pro to multiple PCs through the remote network installation process. The technician begins

by connecting the new PCs to the network and booting them up. However, the deployment fails because the target PCs are unable to communicate with the deployment server. What is the possible cause?

- The wrong network drivers are loaded in the image file.
- The SID has not been changed in the image file.
- **The NIC cards on the new PCs are not PXE-enabled.**
- Sysprep was not used before building the image file.

Explanation: The NIC cards on the new PCs have to be PXE-enabled in order for them to communicate with the remote installation services on the server.

8. Which condition is required when planning to install Windows on a GPT disk?

- **The computer must be UEFI-based.**
- Only one primary partition can contain an OS.
- The maximum partition size cannot exceed 2 TB.
- The maximum number of primary partitions that can co-exist is 4.

Explanation: The globally unique identifier (GUID) partition table (GPT) makes use of a number of modern techniques to expand on the older MBR partitioning scheme. GPT is commonly used in computers with UEFI firmware. For Windows 10 to be installed on, and boot, from a GPT disk UEFI must be used.

9. A technician wishes to perform a customized unattended network installation of Windows 10 on a PC. The requirements include the installation of specific applications and device drivers through the use of an answer file. What would the technician use to create the answer file?

- Recovery partition
- **Windows SIM**
- disk cloning
- System Restore

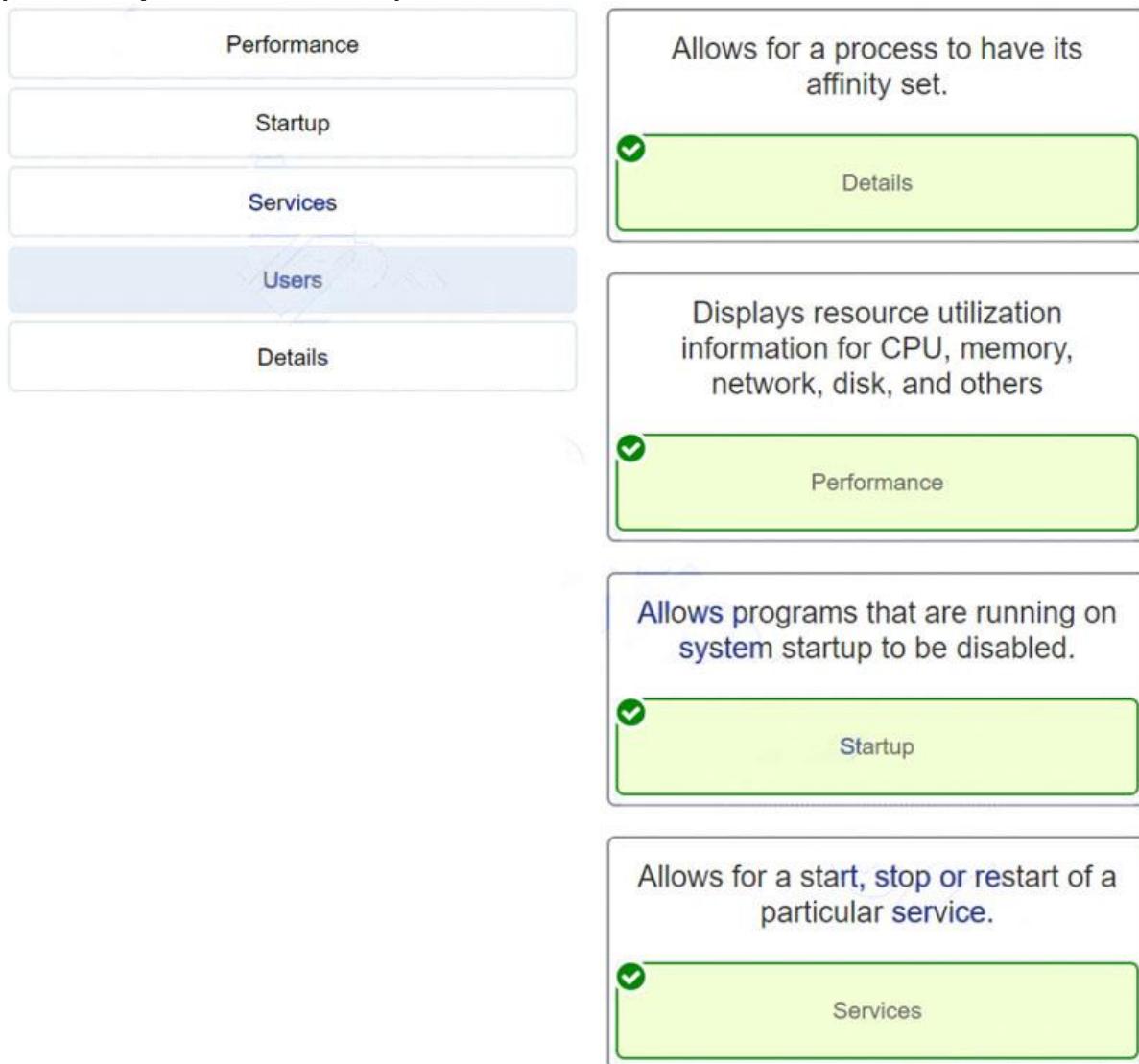
Explanation: To perform a custom Windows Unattended installation, setup.exe must be run with the user options found in the answer file. Additional packages, such as applications or drivers, can be added to the answer file. The Windows System Image Manager (SIM) is used to create the setup answer file.

10. An organization has purchased a custom application for the sales staff that can only be installed on a 64-bit Windows operating system. Each member of the sales staff has a Windows 8.1 32-bit PC. What must the IT department do in order to install and run the application on the sales staff computers?

- Downgrade the 32-bit Windows 8.1 to 64-bit Windows 7.
- Upgrade the 32-bit Windows 8.1 to 64-bit Windows 10.
- **Perform a clean installation of 64-bit Windows 10.**
- Download and install 64-bit hardware drivers in the current OS.

Explanation: A 32-bit OS cannot be upgraded to a 64-bit OS. In this case a clean install of Windows 64-bit would be the only option because the application requires a 64-bit Windows environment to work.

**11. Match the tabs of the Windows 10 Task Manager to their functions.
(Not all options are used.)**



Explanation:

Details	Allows for a process to have its affinity set.
Performance	Displays resource utilization information for CPU, memory, network, disk, and others.
Startup	Allows programs that are running on system startup to be disabled.
Services	Allows for a start, stop or restart of a particular service.

12. Match the drive status indicators in the Disk Management utility with their description. (Not all options are used.)

Offline	a volume that is functioning properly
Healthy	<input checked="" type="checkbox"/> Healthy
Initializing	a basic disk that is being converted into a dynamic disk
Missing	<input checked="" type="checkbox"/> Initializing
Not Initialized	a disk that does not contain a valid signature
Online	<input checked="" type="checkbox"/> Not Initialized
	a basic or dynamic disk that is accessible and shows no problems
	<input checked="" type="checkbox"/> Online
	a dynamic disk that is corrupted or unavailable
	<input checked="" type="checkbox"/> Offline

13. Match the wireless security settings to the description. (Not all options are used.)

Open	The Advanced Encryption Standard (AES) cipher and preshared keys (PSKs) are used to encrypt communications.
WEP	
WPA2-Personal	
WPA2-Enterprise	

IT ExamAnswers

WPA2-Personal
Authentication is passed from the access point to a centralized authentication RADIUS server.

WPA2-Enterprise
Data is sent unencrypted with no authentication.

Open

14. What are two possible solutions to any Windows computer restarting continuously and never displaying the desktop? (Choose two.)

- Upgrade the processor.
- **Press F8 to open the Advanced Options menu and choose Disable Automatic Restart on System Failure.**
- Access the BIOS and change the boot order options.
- **Run chkdsk /F /R from the recovery console.**
- Upgrade the video card.
- Reset the hard drive jumpers.

Explanation: Upgrading the processor, upgrading the video card, or resetting the hard drive jumper would not fix this problem. Boot order settings cannot cause the system to reboot continuously.

15. A technician uses Microsoft Deployment Image Servicing and Management (DISM) tool to create a Windows image file on one of the workstations running Windows 10. When the technician tries to clone another workstation with the image file, the workstation exhibits network connectivity issues on completion. What could cause this?

- **The SID of the original PC is not cleared when creating the image with DISM.**
- The technician used the wrong tool to create the image file.
- The network drivers were not added to the image file.

- The Sysprep utility should have been turned off prior to the creation of the image file.

Explanation: The technician must use Sysprep to clean up the local specific configuration, such as the SID, otherwise the cloned systems will not work properly.

16. A user complains that user files cannot be synced with the network file server while the user is traveling out of the office. The user had access to the internet but no access to the company network server.

How can this be addressed?

- Ensure that the user only uses a single device and not multiple devices when accessing networked files.
- Turn off the activation of Offline Files feature in the Sync Center.
- Setup a Sync partnership with the networked file location.
- **Setup a Sync partnership between the network server, Microsoft OneDrive, and the user.**

Explanation: Because the user has access to the internet, access to the Microsoft OneDrive cloud based service is possible and thus the user can sync with Microsoft OneDrive, which in turn can sync with the company network server from across the internet.

17. A technician has connected a new internal hard drive to a Windows 10 PC. What must be done in order for Windows 10 to use the new hard drive?

- **Initialize the new hard drive.**
- Extend the partition on an existing hard drive to the new hard drive.
- Run chkdsk on the new hard drive.
- Mount the new hard drive.

Explanation: The new hard drive needs to be initialized before it can be used in Windows. This will involve formatting the disk which will erase any existing data on the drive.

18. What service does PRINT\$ provide?

- It provides a network share for accessing shared printers.
- **It provides printer drivers for printer administrators.**
- It provides a group of hidden printers that only administrative users have permissions to send print jobs to.
- It provides an administrative Printer share accessible by all local user accounts.

Explanation: PRINT\$ is a hidden share for printer drivers. It is shared by default and used to access remote shared printers or provide drivers to clients when sharing a printer.

19. A technician is troubleshooting a Windows 10 laptop infected with a virus that has damaged the master boot record. The technician has

booted the laptop using the installation media and is attempting to repair the laptop from the command line interface. Which command can the technician use to repair the corrupt master boot record?

- **bootrec /fixmbr**
- chkdsk
- msconfig
- sfc /scannow

Explanation: The sfc /scannow command is used to check the integrity of the system files. The msconfig command allows for viewing the startup configuration mode, while the chkdsk command is used to repair the Windows file system. The bootrec /fixmbr command is used to repair a corrupt master boot record in a Windows 10 environment.

20. A user reports that a Windows 10 PC displays the error message “Invalid Boot Disk” during the boot process. The IT technician attempts to boot the computer and finds that the error message occurs immediately after the POST. What could be the possible cause?

- A recently installed device driver is incompatible with the boot controller.
- BOOTMGR is corrupted.
- **The MBR/GPT is corrupted.**
- A service failed to start during the booting process.

Explanation: The message “invalid Boot Disk” could be a symptom of a missing or damaged MBR/GPT, a missing or damaged Boot Configuration Data file, a boot sector virus, a boot order not set correctly in BIOS, media without an operating system being in a drive, a hard drive not detected or damaged, or the absence of an installed operating system.

21. Which port number is used by Virtual Network Computing (VNC) to provide remote screen sharing between devices?

- 22
- 23
- 389
- 3389
- **5900**

Explanation: Virtual Network Computing (VNC) is a freeware product that is similar in functionality to RDP and works over port 5900.

22. Which feature is included with macOS and provides the ability for a remote user to view and change files, folders, and applications on the local computer?

- **Screen Sharing**
- Remote Assistance
- Virtual Network Computing
- Remote Desktop

Explanation: In macOS, remote access functionality is provided by the Screen Sharing feature, which is based on Virtual Network Computing (VNC). VNC is a freeware product that is similar in functionality to RDP and works over port 5900.

23. Which area of concern falls under the operations and planning category in IT documentation?

- **inventory management**
- disaster recovery policies and procedures
- logical and physical network topology diagrams
- end-user manual for hardware and software

Explanation: There are four broad categories of IT documentation: Policies, Operations, Projects, and User documentation. Operations is concerned with inventory management.

24. Match the individual languages with their corresponding

classification.

C++

VBScript

Java

C#

Python

JavaScript

Scripting Languages

VBScript

Python

JavaScript

Compiled Languages

C++

Java

C#

Explanation: Scripting languages include Windows batch files, PowerShell, Linux shell script, VBScript, JavaScript, and Python. Compiled languages include C, C++, C#, and Java.

25. Which two actions should a technician take if illegal content, such as child pornography, is discovered on the hard drive of a customer computer? (Choose two.)

- Confront the customer immediately.
- Remove and destroy the hard drive.
- **Contact a first responder.**
- Shut down the computer until authorities arrive.
- **Document as much information as possible.**

Explanation: If illegal content is found, begin documentation to build a chain of custody and contact a first responder immediately.

26. What are three pieces of information a level one technician should gather from a customer? (Choose three.)

- **contact information**
- **description of the problem**
- **details of any recent changes to the computer**
- output from diagnostic software
- output from a remote connection to the customer computer
- current CMOS settings

Explanation: A level one technician should gather information from the customer and solve simple problems. For more advanced diagnostics, opening the computer case, running diagnostics software, and performing remote connections, the problem should be escalated to a level two technician.

27. What two actions are appropriate for a support desk technician to take when assisting customers? (Choose two.)

- Interrupt customers if they start to solve their own problems.
- Comfort a customer by minimizing the customer problem.
- **Let a customer finish talking before asking additional questions.**
- **If you have to put the customer on hold, ask the customer for permission.**
- As soon as you detect customer anger, pass the angry customer to the next level.

Explanation: When dealing with customers, a technician should show professionalism in all aspects. A technician should observe the process before putting a customer on hold. First, let the customer finish speaking. Then, explain that there is need to put the customer on hold for a short period, and ask the customer for permission to do so. Tell the customer that it will be only a few minutes and explain what you will do during the period. When the customer agrees to be put on hold, thank the customer.

28. A support desk technician is dealing with an angry customer. Which two approaches should the technician take in dealing with the customer? (Choose two.)

- Ask socially related questions to direct the customer away from the problem.
- **Work to redirect the conversation to solving the problem.**
- Immediately transfer the customer to a higher level technician.
- Reply to the customer with the same level of anger.
- **Let the customer explain the problem without interrupting.**

Explanation: Angry customers should be allowed to explain the problem, then be redirected to discussing how the problem can be solved. Transferring the customer, replying in a rude tone, and asking unrelated questions will usually increase, not ease, the anger being expressed by the customer.

29. What two kinds of problems should be escalated from a level one technician to a level two technician? (Choose two.)

- problems that require rebooting the equipment
- problems that can be solved in a short time
- **problems that are complicated and will take a long time to resolve**
- problems that do not fit into the “down call” category
- **problems that are beyond the scope of the knowledge of the level one technician**

Explanation: A problem should be escalated to a level two technician when the problem is going to take a long time to fix, is affecting a large number of users, or requires knowledge or expertise that the level one technician does not possess.

30. An IT technician in a service company has provided extensive remote IT support with product deployment for a customer. After the completion of the contract, a complaint is filed against the IT technician for not following company policy by sending unsolicited emails about services and products that are not related to the contract. What two things should the IT support technician have done differently? (Choose two.)

- **The IT technician should have researched the company policy about personal communication with customers on company time.**
- The IT technician should have used encryption to hide the purpose of the emails.
- The IT technician should have added the customer to a chain letter with many recipients instead.
- **The IT technician should have asked the customer if the customer was interested in receiving information regarding other new services and products.**

- The IT technician should have requested permission from a supervisor to send the customer emails.

Explanation: While working with customers both briefly and over an extended period of time, it is possible to form friendly relationships. It is important to always follow company policy and never send unsolicited messages to a customer. Also do not send unsolicited mass mailings or chain letters to customers from a company email address. Any personal relationships should be kept via personal email accounts and should not reflect the IT organization of the employer.

31. A third-party security firm is performing a security audit of a company and recommends the company utilize the Remote Desktop Protocol. What are two characteristics of the Microsoft Remote Desktop Protocol (RDP)? (Choose two.)

- RDP connects on TCP port 22.
- RDP requires a Windows client.
- **RDP uses an encrypted session.**
- RDP is a command-line network virtual terminal protocol.
- **RDP connects on TCP port 3389.**

Explanation: The Remote Desktop protocol (RDP) is used to remotely access a Windows OS. It is a client/server protocol. The port number for RDP is TCP port 3389 and it uses encryption.

32. Which subject area describes collecting and analyzing data from computer systems, networks, and storage devices, as part of an investigation of alleged illegal activity?

- cyber law
- **computer forensics**
- cryptography
- disaster recovery

Explanation: The field of computer forensics involves collecting and analyzing data from computer systems, networks, wireless communications, and storage devices.

33. In a computer forensics investigation, which type of data is considered volatile data and can be lost if power is removed from the computer?

- data stored on magnetic disks
- data stored on an internal drive
- **data in transit between RAM and the CPU**
- data stored on an external drive

Explanation: Volatile data is a data that is lost when power is turned off, and is located in temporary storage such as RAM, cache, CPU or in transit between them.

34. Refer to the exhibit. During the troubleshooting of software that is installed on a computer system, a level one technician requires help from a level two technician. The file shown in the exhibit must be sent to the level two technician. How should the level one technician deliver this file?

```
<output ommited>

<server address='192.168.1.2' />
<server port='8752' />
<server protocol='tcp' />
<server protocol='utp' />

<user username="johndoe" password="S3cr3t" roles="administrator" />
<user username="janedoe" password="1P455W0d!" roles="user"/>
<user username="guest" password="G355_1t" roles="none"/>

<output ommited>
```

- This file should not be shared with the level two technician.
- **Replace all passwords in the file with <password omitted> before emailing the file and then supply the passwords by secure means, if required.**
- Send the file as it is to the level two technician.
- Deliver the file in printed format only.

Explanation: Customer privacy should be maintained. The easiest way to preserve it is removing any occurrence of passwords from the documentation that is being sent to another technician. If a client password is required to solve the problem, it should be sent to another technician through a specific document.

35. What skill is essential for a level one technician to have?

- the ability to gather relevant information from the customer and pass it to the level two technician so it can be entered into the work order
- the ability to ask the customer relevant questions, and as soon as this information is included in the work order, escalate it to the level two technician
- **the ability to translate a description of a customer problem into a few succinct sentences and enter it into the work order**
- ability to take the work order prepared by the level two technician and try to resolve the problem

Explanation: The level one technician must be able to translate the description of a customer problem into a succinct sentence or two that is entered into the work order.

36. What is used to control illegal use of software and content?

- chain of custody
- service level agreement
- End User License Agreement
- **digital rights management**

Explanation: Digital rights management, or DRM, is software that is designed to prevent illegal access to digital content.

37. What determines the level of support that a call center technician will provide to an individual customer?

- **Support is based on the SLA for that customer.**
- All customers receive the same level of support by the call center.
- A level one technician will provide a higher level of support than a level two technician.
- An individual call center technician chooses the level of support based on the time available to assist the customer.

Explanation: A call center technician must provide the level of support that is outlined in the SLA for that individual customer.

38. A bench technician enters the server room and finds the backup server computer case open. The hard drives containing patient medical data are all physically disconnected from the motherboard and the SATA data cables are hanging outside the case. Which step should the technician immediately take?

- Reconnect the SATA data cables to ensure continued data backup.
- Disconnect the SATA power cables to prevent the loss of persistent data.
- Place the hard drives in an external enclosure and begin backing up the data before releasing the drives to first responders.
- **Locate an employee qualified to collect evidence.**
- Dust the server computer case for fingerprints.

Explanation: When a potential crime scene is found, a chain of custody must be observed and followed. The technician should immediately locate another employee who is qualified to collect evidence. Disconnecting or reconnecting the drives or attempting to move data may adversely affect the chain of custody.

39. What is the difference between a scripting language and a compiled language?

- Scripting languages need to be converted into executable code using a compiler, while compiled languages are interpreted as they are executed.
- Compiled languages are executed by the operating system, while scripting languages are executed by the CPU.
- **Scripting languages are interpreted and executed line by line when a script is run, while compiled languages need to be converted into executable code.**
- Compiled languages are executed by a command interpreter, while scripting languages are executed by the CPU.

Explanation: A scripting language is different than a compiled language because each line is interpreted and then executed when the script is run. Compiled languages need to be converted into executable code using a compiler. Another difference between the two types of languages is that compiled languages are executed by the CPU while scripting languages are executed by a command interpreter or by the operating system.

40. Which methods can be used to implement multifactor authentication?

- VPNs and VLANs
- IDS and IPS
- **passwords and fingerprints**
- tokens and hashes

Explanation: A cybersecurity specialist must be aware of the technologies available that support the CIA triad.

41. When responding to a call from a customer who is experiencing problems with a computer, the technician notices that a number of system files on the computer have been renamed. Which two possible solutions could the technician implement to resolve the problem? (Choose two.)

- **Use antivirus software to remove a virus.**
- **Restore the computer from a backup.**
- Change the folder and file permissions of the user.
- Reset the password of the user.
- Upgrade the file encryption protocol.

Explanation: Renamed system files are usually the result of a virus on the computer. Removing the virus and restoring the computer from a backup are the only two possible solutions in this case.

42. A technician suspects that a security issue is causing problems with a computer. What two actions could be performed to test theories of probable cause when troubleshooting the PC? (Choose two.)

- **Log in as a different user.**
- **Disconnect the computer from the network.**
- Search helpdesk repair logs for more information.
- Discuss solutions with the customer.
- Ask the customer open-ended questions about the problem.

Explanation: Several actions can be taken by a technician when security issues are suspected as the possible cause of a problem with a computer. Logging in as a different user or disconnecting the PC from the network to isolate the cause of the problem are two possible actions.

43. The CIO wants to secure data on company laptops by implementing file encryption. The technician determines the best method is to encrypt

each hard drive using Windows BitLocker. Which two things are needed to implement this solution? (Choose two.)

- **at least two volumes**
- USB stick
- password management
- **TPM**
- EFS
- backup

Explanation: Windows provides a method to encrypt files, folders, or entire hard drives depending on need. However, certain BIOS settings and configurations are necessary to implement encryption on an entire hard disk.

44. What is an accurate description of asymmetric encryption technology?

- Asymmetric encryption is an encryption process that compares traffic on both ends to make sure the traffic has not been altered.
- It is an encryption process that uses identical keys on both ends to establish the VPN.
- It is an encryption protocol that is used to encrypt data as the data is sent over the VPN.
- **It is an encryption process that uses a public and private key pair to encrypt/decrypt data.**

45. Which type of security threat can be transferred through email and is used to gain sensitive information by recording the keystrokes of the email recipient?

- adware
- Trojan
- worm
- **virus**
- grayware

Explanation: Adware does not record keystrokes. A worm self-replicates across the network. A Trojan appears to be a legitimate program while carrying malware, and grayware is a general term for software that may be malware.

46. A manager reports that unusual things are happening on a Windows computer. The technician determines that malware is the culprit. What can the technician do to remove stubborn malware?

- Ensure that the computer is connected to the wired network so that antimalware updates can be installed.
- **Enter Safe Mode and do a system restore.**
- Install adware protection.
- Train the user on identifying trusted and untrusted sources.

Explanation: Booting the computer in Safe Mode prevents most drivers from loading. Additional antimalware software can then be installed to remove or

quarantine malware. Sometimes the storage drive must be wiped, the operating system reinstalled, and data restored from a backup.

47. An employee that has worked at the company for many years has started a home-based business selling crafts. While leaving an office meeting, a company supervisor notices the employee buying supplies for the personal crafting business of the employee. What section of the security policy should the supervisor review when determining how to handle this situation?

- **acceptable use policies**
- identification and authentication policies
- incident handling policies
- remote access policies

Explanation: The acceptable use policies section of a security policy commonly identifies network resources and usages that are acceptable to the organization. They might also state the ramifications that can occur if this security policy is violated.

48. What Windows utility should be used to configure password rules and account lockout policies on a system that is not part of a domain?

- Event Viewer security log
- **Local Security Policy tool**
- Active Directory Security tool
- Computer Management

Explanation: A technician must be aware of the technologies and measures that are used as countermeasures to protect the organization from threats and vulnerabilities. A Windows Domain Security Policy is used and applied when a user logs in to a computer that is on a corporate network. A Windows Local Security Policy is used for stand-alone computers to enforce security settings.

49. A customer brings in a computer that is asking for a password as soon as it powers on, even before the operating system boots. Which type of password is enabled?

- **BIOS**
- login
- multifactor
- network
- synchronous

Explanation: A BIOS password is configured by entering the BIOS Setup program. If unknown, it can be removed by placing a jumper over two motherboard pins. Some motherboards support BIOS password removal by removing the CMOS battery, but if this is done, all BIOS settings will be reset to the default values.

50. When attempting to improve system performance for Linux computers with a limited amount of memory, why is increasing the size of the swap file system not considered the best solution?

- A swap file system only supports the ex2 file system.
- A swap file system does not have a specific file system.
- A swap file system cannot be mounted on an MBR partition.
- **A swap file system uses hard disk space to store inactive RAM content.**

Explanation: The swap file system is used by Linux when it runs out of physical memory. When needed, the kernel moves inactive RAM content to the swap partition on the hard disk. Storing and retrieving content in the swap partition is much slower than RAM is, and therefore using the swap partition should not be considered the best solution to improving system performance.

51. What are three features of GPS on mobile devices? (Choose three.)

- phone number lookup
- **navigation**
- **specialized search results**
- **device tracking**
- remote wipe
- gas mileage calculations

Explanation: Navigation, specialized search results, and device tracking are features of GPS on mobile devices. Remote wipe may be a feature on some mobile devices, but is not related to GPS. Phone number lookup and gas mileage calculations are not GPS features.

52. Which three components are used to assign file and directory permissions in Linux systems? (Choose three.)

- root
- **group**
- **owner**
- **all users**
- super group
- admin group

Explanation: In Linux, file and directory permissions are assigned as follows:

- **Owner** – the owner user of the file or directory
- **Group** – the user group that has been assigned to the file or directory
- **All users** – all other users on the system

53. A user downloads a widget onto his Android phone but is puzzled to see that when the widget is touched an app is launched. What is a possible cause?

- The user has downloaded a virus.

- The widget is corrupt.
- The security settings of the Android OS have been compromised.
- **The widget is associated with the app and this is the normal behavior.**

Explanation: Widgets are programs that when installed associate with the application they were built for. This will cause the application to launch when the widget icon is touched on the touchscreen of the Android device.

54. What is the purpose of running mobile device apps in a sandbox?

- to enable the phone to run multiple operating systems
- **to prevent malicious programs from infecting the device**
- to enable separate app icons to be displayed on the home screen
- to bypass phone carrier restrictions that prevent access to unauthorized apps

Explanation: Mobile device apps are run in a sandbox that isolates them from other resources. Bypassing the phone carrier from preventing access to unauthorized apps is jailbreaking or rooting the device.

55. Which built-in tool is available on a Mac OS X machine to perform disk backups?

- Disk Utility
- Deja Dup
- Finder
- **Time Machine**

Explanation: Time Machine is an automatic backup utility in the Mac OS. The Mac Disk Utility allows an administrator to configure disk backups. The Deja Dup tool is a tool built into the Linux OS for backing up data. Finder is similar to the Windows File Explorer tool and is used to navigate the Mac OS file system.

56. A user calls the help desk reporting that a laptop with Linux freezes on startup and displays kernel panic. What could cause this problem?

- **A driver has become corrupted.**
- GRUB or LILO has been deleted.
- GRUB or LILO has been corrupted.
- An application is using a resource that has become unavailable.

Explanation: A corrupted driver or failing hardware could cause kernel panic for Linux or Mac OS. The laptop will not be able to boot successfully. Either GRUB or LILO corruption or GRUB or LILO deletion would cause the stop screen to display a “Missing GRUB” or “Missing LILO” message. A resource unavailable to an application will cause the application to stop responding, but not prevent a laptop from starting up.

57. A user calls the help desk to report that a mobile device exhibits very slow performance. What could cause this problem?

- The touchscreen is not calibrated.
- An app is not compatible with the device.
- The operating system is corrupt.
- **A power-intensive app is running in the background.**

Explanation: A power-intensive app that is running in the background could consume most of the CPU cycles and thus the device would exhibit very slow performance for other apps. If an app is not compatible with the device, the device operating system would freeze. If the operating system has encountered an error, the device will fail to respond.

58. Which term describes a partition that is used to store and boot an operating system by default?

- logical drive
- **active partition**
- basic disk
- extended partition

59. Which term describes a file system that supports a partition size up to 16 exabytes?

- extended partition
- **NTFS**
- logical drive
- active partition

60. Which term describes a file system for USB flash drives that supports files larger than 4 GB?

- extended partition
- **exFAT**
- logical drive
- active partition

61. Which term describes a partition that supports up to 23 logical drives?

- logical drive
- **extended partition**
- basic disk
- active partition

62. Which term describes a file system for optical disk media?

- extended partition
- **CDFS**
- logical drive
- active partition

63. Which term describes a type of partition that would only exist on a hard disk that has an MBR?

- extended partition
- **logical drive**
- basic disk
- active partition

64. Which term describes a type of storage device that supports a partition to be extended into adjacent unallocated space as long as it is contiguous?

- NTFS
- **basic disk**
- FAT32
- formatting

65. Which term describes a general name for physical areas on a hard drive?

- NTFS
- **partition**
- FAT32
- formatting

66. Which term describes a partition scheme that takes a portion of disk space of 512 bytes long and that contains the boot loader?

- NTFS
- **MBR**
- FAT32
- formatting

67. Which term describes a type of storage device that supports a volume that can span across more than one disk?

- NTFS
- **dynamic disk**
- FAT32
- formatting

68. A technician is booting a laptop that has Windows 10 installed with 2 GB RAM. The boot process is currently working on the following step:

NTOSKRNL.EXE starts the login file called WINLOGON.EXE. What is the next step that will happen in the boot process?

- **WINLOGON.EXE displays the Windows Welcome screen.**
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- Winload uses the path specified in BOOTMGR to find the boot partition.

69. A user is booting a tablet that has Windows 10 installed. The boot process is currently working on the following step: WINLOGON.EXE displays the Windows Welcome screen. What is the next step that will happen in the boot process?

- **There are no more steps, the boot process is complete.**
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- Winload uses the path specified in BOOTMGR to find the boot partition.

Explanation: The Windows 10 boot process is as follows:

1 . PreBoot: POST or Power-On Self-Test loads firmware settings. It checks

for a valid disk system, and if the system is good to go for the next phase. If the computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.

2 . Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.

3 . Windows OS Loader: WinLoad.exe loads important drivers to kick start the Windows Kernel. The kernel uses the drivers to talk to the hardware and do rest of the things required for the boot process to continue.

4 . Windows NT OS Kernel: This is the last stage which picks up the Registry settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen

70. A manager is booting a tablet that has Windows 8 installed. The boot process is currently working on the following step: POST. What is the next step that will happen in the boot process?

- **BIOS locates and reads the configuration settings that are stored in the CMOS memory.**
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- The Windows kernel takes over the boot process.
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.

Explanation: Boot Sequence for Windows:

- Power on Self Test (POST)
- POST for each adapter card that has a BIOS
- BIOS reads the MBR
- MBR takes over control of the boot process and starts BOOTMGR
- BOOTMGR reads the Boot Configuration Data file to know which OS to load and where to find the OS on the boot partition
- BOOTMGR invokes WINLOAD.EXE in order to load the NTOSKRNL.EXE file and HAL.DLL
- BOOTMGR reads the registry files and loads device drivers
- NTOSKRNL.EXE starts the WINLOGON.EXE program and displays the Windows login screen.

71. An accountant is booting a PC that has Windows 8 installed. The boot process is currently working on the following step: BIOS locates and reads the configuration settings that are stored in the CMOS memory. What is the next step that will happen in the boot process?

- **The BIOS boots the computer using the first drive that contains a valid boot sector.**
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.

- The Windows kernel takes over the boot process.
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.

Explanation: The Windows 10 boot process is as follows:

- 1 . PreBoot: POST or Power-On Self-Test loads firmware settings. It checks for a valid disk system, and if the system is good to go for the next phase. If the computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.
- 2 . Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.
- 3 . Windows OS Loader: WinLoad.exe loads important drivers to kick start the Windows Kernel. The kernel uses the drivers to talk to the hardware and do rest of the things required for the boot process to continue.
- 4 . Windows NT OS Kernel: This is the last stage which picks up the Registry settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen.

72. A network analyst is booting a PC that has Windows 7 installed with 2 GB RAM. The boot process is currently working on the following step: The code in the boot sector is executed and the control of the boot process is given to Windows Boot Manager. What is the next step that will happen in the boot process?

- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- The Windows kernel takes over the boot process.
- **Winload uses the path specified in BOOTMGR to find the boot partition.**
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.

73. An analyst is booting a desktop that has Windows 7 installed with 4 GB RAM. The boot process is currently working on the following step: Winload uses the path specified in BOOTMGR to find the boot partition. What is the next step that will happen in the boot process?

- There are no more steps, the boot process is complete.
- WINLOGON.EXE displays the Windows Welcome screen
- NTOSKRNL.EXE starts the login file called WINLOGON.EXE.
- **WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.**

74. A gamer is booting a desktop that has Windows 7 installed on dynamic drives. The boot process is currently working on the following step: WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers. What is the next step that will happen in the boot process?

- **The Windows kernel takes over the boot process.**
- There are no more steps, the boot process is complete.
- WINLOGON.EXE displays the Windows Welcome screen
- NTOSKRNL.EXE starts the login file called WINLOGON.EXE.

75. A technician is booting a laptop that has Windows 10 installed with 2 GB RAM. The boot process is currently working on the following step: The Windows kernel takes over the boot process. What is the next step that will happen in the boot process?

- There are no more steps, the boot process is complete.
- WINLOGON.EXE displays the Windows Welcome screen
- The Windows kernel takes over the boot process.
- **NTOSKRNL.EXE starts the login file called WINLOGON.EXE.**

76. A user is booting a laptop that has Windows 10 installed. The boot process is currently working on the following step: WINLOGON.EXE displays the Windows Welcome screen. What is the next step that will happen in the boot process?

- WINLOGON.EXE displays the Windows Welcome screen
- NTOSKRNL.EXE starts the login file called WINLOGON.EXE.
- **There are no more steps, the boot process is complete.**
- The Windows kernel takes over the boot process.

Explanation: The Windows 10 boot process is as follows:

- 1 . PreBoot: POST or Power-On Self-Test loads firmware settings. It checks for a valid disk system, and if the system is good to go for the next phase. If the computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.
- 2 . Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.
- 3 . Windows OS Loader: WinLoad.exe loads important drivers to kick start the Windows Kernel. The kernel uses the drivers to talk to the hardware and do rest of the things required for the boot process to continue.
- 4 . Windows NT OS Kernel: This is the last stage which picks up the Registry settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen

77. A manager is booting a tablet that has Windows 8 installed. The boot process is currently working on the following step: The Windows kernel takes over the boot process. What is the next step that will happen in the boot process?

- The Windows kernel takes over the boot process.
- **NTOSKRNL.EXE starts the login file called WINLOGON.EXE.**
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.

- WINLOGON.EXE displays the Windows Welcome screen

78. Users in a company have complained about network performance. After investigation, the IT staff has determined that the attacker was using a specific technique that affected the TCP three-way handshake. What is the type of network attack?

- **SYN flood**
- DDoS
- DNS poisoning
- zero-day

Explanation: The TCP SYN flood attack exploits the TCP three-way handshake. The threat actor continually sends TCP SYN session request packets with a randomly spoofed source IP address to an intended target.

79. Users in a company have complained about network performance. After investigation, the IT staff has determined that the attacker is using a technique that compares hashed passwords to potential hashes the hacker has. What is the type of network attack?

- **rainbow table**
- DDoS
- DNS poisoning
- SYN flood

80. Users in a company have complained about network performance. After investigation, the IT staff has determined that the DNS server was sent with an enormous amount of false requests, thus overwhelming the server. What is the type of network attack?

- DNS poisoning
- SYN flood
- zero-day
- **DoS**

81. Users in a company have complained about network performance. After investigation, the IT staff has determined that the attacker is using a vulnerability that is known to the software vendor, but not patched yet.

What is the type of network attack?

- DDoS
- DNS poisoning
- **zero-day**
- SYN flood

82. Users in a company have complained about network performance. After investigation, the IT staff has determined that zombies were used to attack the firewall. What is the type of network attack?

- **DDoS**
- DNS poisoning
- SYN flood
- zero-day

83. Users in a company have complained about network performance. After investigation, the IT staff has determined that zombies were used to attack the firewall. What is the type of network attack?

- zero-day
- dictionary
- SYN flood
- **DDoS**

84. Users in a company have complained about network performance. After investigation, the IT staff has determined that the attacker is using a table of words that potentially could be used as passwords. What is the type of network attack?

- SYN flood
- zero-day
- **dictionary**
- DNS poisoning

85. Users in a company have complained about network performance. After investigation, the IT staff has determined that the attacker injected false records on the server that translates IP addresses to domain names. What is the type of network attack?

- **DNS poisoning**
- zero-day
- dictionary
- SYN flood

86. Users in a company have complained about network performance. After investigation, the IT staff has determined that the attacker is using a technique that compares hashed passwords to potential hashes the hacker has. What is the type of network attack?

- SYN flood
- zero-day
- DNS poisoning
- **rainbow table**

87. Users in a company have complained about network performance. After investigation, the IT staff has determined that the attacker was using a specific technique that affected the TCP three-way handshake. What is the type of network attack?

- zero-day
- **SYN flood**
- dictionary
- DNS poisoning

88. A PC technician has been asked by a supervisor to recommend a security solution for a company that wants a device to monitor incoming and outgoing traffic and stop any malicious activity. Which security technique should the technician recommend?

- Implement a RAID.
- Provide security awareness training.
- Use SSL.

- **Buy an IPS.**

89. A PC technician has been asked by a supervisor to recommend a security solution for a machine where the antimalware software cannot remove all of the malware. Which security technique should the technician recommend?

- **Use Windows Safe Mode.**
- Implement a RAID.
- Provide security awareness training.
- Use SSL.

90. A PC technician has been asked by a supervisor to recommend a security solution for a machine where the antimalware software cannot remove all of the malware. Which security technique should the technician recommend?

- **Use Windows Safe Mode.**
- Implement a RAID.
- Provide security awareness training.
- Use encryption.

91. A PC technician has been asked by a supervisor to recommend a security solution for preventing tailgating. Which security technique should the technician recommend?

- Implement a RAID.
- **Use a mantrap.**
- Provide security awareness training.
- Use encryption.

92. A PC technician has been asked by a supervisor to recommend a security solution for drive redundancy. Which security technique should the technician recommend?

- Provide security awareness training.
- Disable ports.
- Implement dual authentication.
- **Implement a RAID.**

93. A PC technician has been asked by a supervisor to recommend a security solution for drive redundancy. Which security technique should the technician recommend?

- **Implement a RAID.**
- Buy an ASA.
- Use a VPN.
- Implement dual authentication.

94. A PC technician has been asked by a supervisor to recommend a security solution for phishing. Which security technique should the technician recommend?

- Buy an ASA.
- Use a VPN.
- **Provide security awareness training.**
- Employ ping sweeps.

95. A PC technician has been asked by a supervisor to recommend a security solution for protecting a computer used to log in at a dental clinic from someone using a bootable disk containing hacking tools. Which security technique should the technician recommend?

- Buy an ASA.
- Use a VPN.
- Employ ping sweeps.
- **Disable ports.**

96. A PC technician has been asked by a supervisor to recommend a security solution for protecting a computer used to log in at a dental clinic from someone using a bootable disk containing hacking tools. Which security technique should the technician recommend?

- **Disable ports.**
- Buy an ASA.
- Use a VPN.
- Run vulnerability scanners.

97. A PC technician has been asked by a supervisor to recommend a security solution for a manager traveling who needs access to internal corporate resources. Which security technique should the technician recommend?

- Buy an ASA.
- **Use a VPN.**
- Disable ports.
- Run vulnerability scanners.

98. Why would a gamer need to use the move command?

- **to relocate a file from one Windows directory to another one**
- to prepare a hard drive to accept Windows files
- to manage a PCs drives, disks, partitions, volumes, and virtual drives
- to copy files, directories, and subdirectories from one location to another

99. Why would a gamer need to use the copy command?

- to prepare a hard drive to accept Windows files
- to manage a PCs drives, disks, partitions, volumes, and virtual drives
- to copy files, directories, and subdirectories from one location to another
- **to move that file to a different Windows directory while also leaving the file in the current location**

100. Why would a university student need to use the robocopy command?

- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- to shutdown several remote computers one at a time
- **to copy a group of files from one Windows directory to another**
- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system

101. Why would a university student need to use the xcopy command?

- **to copy files, directories, and subdirectories from one location to another**
- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- to shutdown several remote computers one at a time
- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system

102. Why would a technical support representative need to use the format command?

- **to prepare a hard drive to accept Windows files**
- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- to shutdown several remote computers one at a time
- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system

103. Why would a technical support representative need to use the bootrec command?

- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- **to help to repair the MBR that is suspected of having issues**
- to shutdown several remote computers one at a time
- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system

104. Why would a technical support representative need to use the ipconfig command?

- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- to shutdown several remote computers one at a time
- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system
- **to display the IPv6 address of the PC**

105. Why would a user need to use the netstat command?

- **to verify activity on the PC by displaying all active TCP connections on the device**
- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- to shutdown several remote computers one at a time
- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system

106. Why would a user need to use the nslookup command?

- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- **to query the Domain Name System (DNS) to get domain names and mapping information**
- to shutdown several remote computers one at a time

- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system

107. Why would a manager need to use the ping command?

- to change from the current working folder to another folder
- to create a new Windows directory
- to remove an empty directory
- **to quickly verify connectivity by sending echo-request messages to the destination and receiving a series of echo-reply messages from that destination**

108. What are two probable causes of a user unable to access local resources such as file shares or printers on a wired network? (Choose two.)

- **bad cabling**
- ISP down
- incorrect gateway address
- **DNS name resolution not working**
- poor Wi-Fi signal

Explanation: There are many issues which can cause local resources to be unavailable. These include bad cabling, a switch or router not functioning, a firewall blocking traffic, DNS name resolution not working, or failed services.

109. The IT department has just purchased 15 wireless access points in order to provide full wireless coverage for all 100 employees within the company and is looking to deploy the most secure and scalable wireless implementation. Which open source authentication method would perform authentication on behalf of all 15 wireless network devices?

- TACACS+
- TKIP
- **RADIUS**
- WPA2-PSK

Explanation: RADIUS and TACACS+ both use a separate server that performs authentication on behalf of network devices. However, RADIUS is an open standard and provides greater compatibility.

110. A technician is upgrading many PCs used within the company. How should the technician dispose of an old inkjet printer cartridge?

- Give it to your neighbor.
- **Recycle following local regulations.**
- Take it home.
- Seal in a plastic bag before putting in the garbage.

111. A client packet is received by a server. The packet has a destination port number of 3389. What service application is the client requesting?

- SSH
- Telnet
- SMTP
- **RDP**

112. A client packet is received by a server. The packet has a destination port number of 67. What service application is the client requesting?

- SSH
- Telnet
- **DHCP**
- SMTP

113. A client packet is received by a server. The packet has a destination port number of 443. What service application is the client requesting?

- **HTTPS**
- SSH
- Telnet
- SMTP

114. A client packet is received by a server. The packet has a destination port number of 69. What service application is the client requesting?

- SSH
- Telnet
- SMTP
- **TFTP**

115. A client packet is received by a server. The packet has a destination port number of 445. What service application is the client requesting?

- SSH
- Telnet
- **SMB/CIFS**
- SMTP

116. A client packet is received by a server. The packet has a destination port number of 548. What service application is the client requesting?

- **AFP**
- HTTP
- TFTP
- POP3

117. A client packet is received by a server. The packet has a destination port number of 80. What service application is the client requesting?

- **HTTP**
- POP3
- TFTP
- NetBIOS (NetBT)

118. A client packet is received by a server. The packet has a destination port number of 3389. What service application is the client requesting?

- HTTP
- **RDP**
- TFTP
- POP3

119. A PC technician has been asked by a supervisor to recommend a security solution for a small company that wants stateful firewall services. Which security technique should the technician recommend?

- Disable ports.
- Use a VPN.
- Setup footprinting.

- **Buy an ASA.**

120. A gamer is booting a desktop that has Windows 10 installed on dynamic drives. The boot process is currently working on the following step: WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers. What is the next step that will happen in the boot process?

- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.
- **The Windows kernel takes over the boot process. ***
- Winload uses the path specified in BOOTMGR to find the boot partition.

121. A technician is working on a laptop and an error message about decryption appears when opening an email. What is a possible solution for this situation?

- **Install an appropriate certificate.**
- Check the screen refresh rate.
- Ensure that only one app is open at a time.
- Ensure that Wi-Fi is turned off.

122. A technician is working on a laptop and an error message about decryption appears when opening an email. What is a possible solution for this situation?

- **Install an appropriate certificate.**
- Replace the digitizer.
- Ensure that only one app is open at a time.
- Ensure that Wi-Fi is turned off.

123. A technician is working on a laptop and an error message about decryption appears when opening an email. What is a possible solution for this situation?

- Replace the digitizer.
- Check the screen refresh rate.
- **Install an appropriate certificate.**
- Check the display settings.

124. A technician is working on a laptop and a key on the keyboard is not responding as it should. What is a possible solution for this situation?

- Update all security apps.
- Check the screen refresh rate.
- Check the display settings.
- **Clean with compressed air.**

125. A technician is working on a laptop and a key on the keyboard is not responding as it should. What is a possible solution for this situation?

- Ensure that Bluetooth is not activated.
- Check the screen refresh rate.
- Check the display settings.
- **Clean with compressed air. ***

126. A technician is working on a laptop and GPS is not functioning. What is a possible solution for this situation?

- **Verify that airplane mode is not activated.**
- Ensure that Bluetooth is not activated.
- Check the screen refresh rate.
- Check the display settings.

127. A technician is working on a laptop and GPS is not functioning. What is a possible solution for this situation?

- Check the fan on the GPU.
- Check the screen refresh rate.
- **Verify that airplane mode is not activated.**
- Check the display settings.

128. A technician is working on a laptop and GPS is not functioning. What is a possible solution for this situation?

- **Verify that airplane mode is not activated.**
- Ensure that Wi-Fi is turned off.
- Check the screen refresh rate.
- Check the display settings.

129. A technician is working on a laptop and GPS is not functioning. What is a possible solution for this situation?

- Ensure that Wi-Fi is turned off.
- Check the screen refresh rate.
- **Verify the status of service.**
- Check the display settings.

130. A technician is working on a laptop and GPS is not functioning. What is a possible solution for this situation?

- Ensure that only one app is open at a time.
- Recharge the battery.
- Check the display settings.
- **Verify the status of service.**

131. Why would a manager need to use the tracert command?

- **to display a list of the near-side router interfaces between the source device and the destination device**
- to move that file to a different Windows directory while also leaving the file in the current location
- to copy a group of files from one Windows directory to another
- to relocate a file from one Windows directory to another one

Explanation: Tracert is a utility that generates a list of hops that were successfully reached along the path. This list can provide important verification and troubleshooting information. If the data reaches the destination, then the trace lists the interface of every router in the path between the hosts. If the data fails at some hop along the way, the address of the last router that responded to the trace can provide an indication of where the problem or security restrictions are found.

132. Why would a manager need to use the sfc command?

- to move that file to a different Windows directory while also leaving the file in the current location
- **to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions**
- to copy a group of files from one Windows directory to another
- to relocate a file from one Windows directory to another one

133. Why would a technician need to use the DISM command?

- to move that file to a different Windows directory while also leaving the file in the current location
- to copy a group of files from one Windows directory to another
- to relocate a file from one Windows directory to another one
- **to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system**

134. Why would a technician need to use the tasklist command?

- to create a new Windows directory
- **to display a list of current processes running on a local or a remote computer**
- to remove an empty directory
- to change from the current working folder to another folder

135. Why would an analyst need to use the taskkill command?

- to create a new Windows directory
- to remove an empty directory
- to change from the current working folder to another folder
- **to end one or more processes on a PC based on process ID or image name**

136. Why would an analyst need to use the msconfig command?

- **to select some programs that will automatically run at startup**
- to remove an empty directory
- to erase one or more files from a Windows directory
- to create a new Windows directory

137. Why would an analyst need to use the dir command?

- **to show all of the files in the current directory**
- to remove an empty directory
- to erase one or more files from a Windows directory
- to create a new Windows directory

138. Why would a bank manager need to use the gpupdate command?

- to remove an empty directory
- to erase one or more files from a Windows directory
- **to make the PC synchronize with new group policy settings**
- to create a new Windows directory

139. Why would a bank manager need to use the gpreresult command?

- **to verify the settings that are suspected to be incorrect**
- to remove an empty directory
- to erase one or more files from a Windows directory
- to create a new Windows directory

140. Why would a lawyer need to use the cd command?

- to remove an empty directory
- to erase one or more files from a Windows directory
- to create a new Windows directory
- **to change from the current working folder to another folder**

141. The IT department has just purchased 15 wireless access points in order to provide full wireless coverage for all 100 employees within the company and is looking to deploy the most secure and scalable wireless implementation. Which open source authentication method would perform authentication on behalf of all 15 wireless network devices?

- TACACS+
- TKIP
- **RADIUS**
- WPA2-PSK

Explanation: RADIUS and TACACS+ both use a separate server that performs authentication on behalf of network devices. However, RADIUS is an open standard and provides greater compatibility.

142. Refer to the exhibit. What is true of this mobile device screen?



- Tapping and holding the arrow at the bottom left will display the Home screen.
- **Text messages, news, photos and other content can be displayed in the different tiles.**
- Icons and buttons are used to represent the different apps on the phone.
- Unpinning an app from this view will uninstall the app from the phone.
- Tile sizes depend on the size of the app.

Explanation: The Windows Phone interface uses tiles to represent apps. Tiles are rectangular areas of a screen that identify the app and may also contain active content such as text messages, news feeds, and photos.

143. An accountant is booting a PC that has Windows 10 installed. The boot process is currently working on the following step: BIOS locates and reads

the configuration settings that are stored in the CMOS memory. What is the next step that will happen in the boot process?

- Winload uses the path specified in BOOTMGR to find the boot partition.
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.
- **The BIOS boots the computer using the first drive that contains a valid boot sector.**
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.

Explanation: The Windows 10 boot process is as follows:

1. PreBoot: POST or Power-On Self-Test loads firmware settings. It checks for a valid disk system, and if the system is good to go for the next phase. If the computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.
2. Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.
3. Windows OS Loader: WinLoad.exe loads important drivers to kick start the Windows Kernel. The kernel uses the drivers to talk to the hardware and do rest of the things required for the boot process to continue.
4. Windows NT OS Kernel: This is the last stage which picks up the Registry settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen

144. An analyst is booting a desktop that has Windows 10 installed with 4 GB RAM. The boot process is currently working on the following step: Winload uses the path specified in BOOTMGR to find the boot partition. What is the next step that will happen in the boot process?

- There are no more steps, the boot process is complete.
- NTOSKRNL.EXE starts the login file called WINLOGON.EXE.
- WINLOGON.EXE displays the Windows Welcome screen
- **WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.**

Explanation: The Windows 10 boot process is as follows:

1. PreBoot: POST or Power-On Self-Test loads firmware settings. It checks for a valid disk system, and if the system is good to go for the next phase. If the computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.
2. Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.
3. Windows OS Loader: WinLoad.exe loads important drivers to kick start the

Windows Kernel. The kernel uses the drivers to talk to the hardware and do rest of the things required for the boot process to continue.

4. Windows NT OS Kernel: This is the last stage which picks up the Registry settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen.

145. What is a possible situation when it might be necessary to boot Windows 10 from a bootable recovery USB device?

- to partition the hard drive
- to delete registry keys
- **to repair the operating system**
- to disable background services

Explanation: You can boot Windows 10 from a repair boot USB drive and repair your computer with corresponding recovery tools, such as bootrec commands. A Windows 10 repair boot USB is a bootable recovery drive made with USB.

146. Which statement is true regarding mobile devices using the Wireless Wide Area Network (WWAN)?

- They require a 64-bit operating system.
- **They require an adapter to link to a cellular provider's network through the nearest base station or transmitter.**
- They can only be connected through external WWAN USB adapters.
- The bandwidth available over WWAN connections is fixed and is independent of the technologies supported by the adapter and the transmitter.

Explanation: Mobile devices use Wireless Wide Area Network (WWAN) or cellular Internet access technology. WWAN requires using an adapter to link to a cellular provider network through the nearest base station or transmitter. WWAN adapters can be internally or externally connected by USB. The bandwidth available over WWAN connections depends on technologies supported by the adapter and the transmitter, such as 3G or 4G. Connection to the WWAN is automatic once the adapter and adapter software are installed.

147. A Windows 10 computer locks up with a stop error during startup and then automatically reboots. The automatic restart setting is making it difficult to see any error messages. What can be done so that the error messages can be viewed?

- Use the System Recovery options to restart the operating system.
- View the error messages and recover the system using the System Image Recovery tool.
- **Access the System and Security options menu in the control panel and disable the auto restart function.**

- Use the Command Prompt option to research the stop error messages.

Explanation: The error messages are difficult to read so the best solution is to first try to disable the auto restart function. To disable auto restart, follow these steps:

Open Control Panel and navigate to Control Panel\System and Security\System (copy paste in the Control Panel address bar)

Click 'Advanced system settings' and click 'Settings...' under the Startup and Recovery section

Under System Failure, uncheck Automatically Restart

Click 'OK' and 'OK' again to close the window

148. Which statement is true regarding libraries in Windows 10?

- **Libraries allow Windows 10 to link multiple different directories.**
- Libraries allow Windows 10 to enforce the EFS file system.
- Libraries allow Windows 10 to support file names longer than 20 characters.
- Libraries allow Windows 10 to index files faster.

Explanation: Libraries in Windows 10 allow multiple different directories to be linked together in one location.

149. A corporation would like to use three or more factors for the password authentication policy. How can this be achieved?

- bitlocker
- SFA
- 2FA
- **MFA**

Explanation: MFA (Multi-Factor Authentication) requires users to present at least two, if not more, types of authentication. 2FA (Two-Factor authentication), also sometimes referred to as 2-step verification, is a security approach requiring users to present two factors for authentication for accessing an account. SFA (Single-Factor Authentication) requires users to authenticate with only one type of evidence for authentication, usually a password. Bitlocker encrypts drives.

150. A system administrator has been asked to protect the sensitive data on Windows 10 computers of all management employees. Which Windows 10 feature can be used to selectively encrypt individual files within the user accounts of each manager?

- **EFS**
- BitLocker
- TPM
- Windows Update

Explanation: Encrypting File System (EFS) is a Windows feature that can be used to encrypt files and folders linked to a specific user account. BitLocker is a Windows feature that can be used to encrypt the entire hard drive volume. TPM is a specialized chip on the motherboard that stores information specific

to the computer system such as encryption keys, digital certificates, and passwords. Windows Update is used to update the operating system, not to encrypt data.

151. Which two statements are true regarding 64-bit processor architecture? (Choose two.)

- **It supports both 32-bit and 64-bit operating systems.**
- **It has additional registers for 64-bit address space.**
- It only supports 64-bit operating systems.
- It has only 64-bit registers.
- It supports a maximum of 4GB RAM memory.

Explanation: The 64-bit processor architecture contains additional 64-bit registers to support 64-bit address space. This allows it to run both 32-bit and 64-bit operating systems and applications.

152. A manager is booting a tablet that has Windows 10 installed. The boot process is currently working on the following step: POST. What is the next step that will happen in the boot process?

- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.
- The Windows kernel takes over the boot process.
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- **BIOS locates and reads the configuration settings that are stored in the CMOS memory.**

Explanation: Explanation: Boot Sequence for Windows:

- Power on Self Test (POST)
- POST for each adapter card that has a BIOS
- BIOS reads the MBR
- MBR takes over control of the boot process and starts BOOTMGR
- BOOTMGR reads the Boot Configuration Data file to know which OS to load and where to find the OS on the boot partition
- BOOTMGR invokes WINLOAD.EXE in order to load the NTOSKRNL.EXE file and HAL.DLL
- BOOTMGR reads the registry files and loads device drivers
- NTOSKRNL.EXE starts the WINLOGON.EXE program and displays the Windows login screen

153. A computer technician uses Windows tools to gather information such as system components, operating system, users, and disk drives on multiple systems within the company. Another technician suggests that the tasks would take less time if they were automated. Which two built-in scripting capabilities in Windows enable a technician to run a simple text file, created in Notepad, which contains the necessary commands and variables?

(Choose two.)

- Linux Bash shell script interpreter
- **PowerShell ISE script interpreter**

- JavaScript client-side scripting language
- **command line batch script interpreter**
- C++ and C# built-in compiler

154. Why would a lawyer need to use the tracert command?

- to verify activity on the PC by displaying all active TCP connections on the device
- to query the Domain Name System (DNS) to get domain names and mapping information
- to quickly verify connectivity by sending echo-request messages to the destination and receiving a series of echo-reply messages from that destination
- **to display a list of the near-side router interfaces between the source device and the destination device**

Explanation: tracert – The command traces the route that packets take from your computer to a destination host. At the command prompt, enter tracerthoname. The first listing in the results is your default gateway. Each listing after that is the router that packets are traveling through to reach the destination. Tracert shows you where packets are stopping, indicating where the problem is occurring.

155. Match the file system with the respective description.

	Supports partition sizes up to 16 exabytes and incorporates file system security features and extended attributes.
	NTFS
	Usually used on flash drives as it can support files larger than 4GB.
	ExFAT
	Supports partition sizes up to 2TB or 2,048GB.
	FAT32
	Created specifically for optical disk media.
	CDFS
	A network-based file system that allows file access over the network.
	NFS



156. Match the steps that will lead to the loading of bootmgr.exe in a 32 bit Windows 10 environment.



157. A technician wishes to start Windows 10 in safe mode to troubleshoot it. What key or key combination would begin this process?

- ctrl + F6 and restart
- **hold the Shift key and select the Restart option in the Power menu**
- recycle power and hold down the del key
- recycle power and hold down the F8 key

Explanation: Hold the Shift key and select the Restart option in the Power menu. This will display the Choose an Option screen. To get the startup settings, select Troubleshoot, then from the next screen, select Advanced options. Inside Advanced options, select Startup settings, then on the next screen, select Restart. The computer will then restart and display the Startup Settings menu from which you can select enable Safe Mode.

158. Select the Windows 10 version that best meets the described use.

- 
- Used for personal computing and gaming with built-in features like family safety and parental control.

Windows 10 Home
 - Used in an academic environment with volume licensing options.

Windows 10 Education
 - Used in small business environments with built-in security, productivity, and management features.

Windows 10 Pro
 - Used in large to mid-size business environments requiring advanced security and management features.

Windows 10 Enterprise

159. A user notes that the username and password are automatically populated in the Microsoft Edge browser when logging into a secure site. When the user tries to log into the same site using Google Chrome, the username and password do not save automatically. Why is this occurring?

- Google Chrome does not support that secure site.
- The certificate for that site has not been authenticated.
- The Google Chrome browser is corrupt.
- **Google Chrome does not automatically save web credentials.**

Explanation: Web credentials do not save for sites accessed by browsers other than Internet Explorer and Edge. Credentials created with other browsers must be managed from within that browser.

IT Essentials 7.0 8.0 Course Final Exam – Composite (Chapters 1-14) Answers

1. In which situation would an ESD strike potentially cause harm to the PC?

- **when replacing a mechanical hard drive with an M.2 SSD**
- when installing an additional display in a workplace cubicle
- when using a grounded mat and working on a computer on an ungrounded workbench
- when installing a dual-voltage power supply

Other case

- when installing an additional display in a workplace cubicle
- when replacing high voltage laser printer parts
- while attaching speakers to a surround sound card
- when installing a UPS
- **when installing RAM**

Explanation: Minimize the risk of electrostatic discharge. Whenever 2 things touch, there is always an exchange of electrons at the atomic level. Most of the time, this exchange is so negligible that you don't notice it, but even tiny bolts of static electricity can fry your RAM modules. In fact, any electrical component in your computer has a chance to be damaged by static electricity.

2. A person has started a new technical job. In which situation would ESD be an issue?

- **when installing a processor**
- when using a grounded mat and working on a computer on an ungrounded workbench
- when installing a dual-voltage power supply
- while exchanging one laptop AC adapter with one that is not from the original equipment manufacturer

Other case

- **when installing RAM**
- when installing an additional display in a workplace cubicle
- when replacing high voltage laser printer parts
- while attaching speakers to a surround sound card

3. A technician is about to begin preventive maintenance on a company PC. In which situation would ESD be an issue?

- **when replacing a motherboard**
- while attaching speakers to a surround sound card
- when using a grounded mat and working on a computer on an ungrounded workbench
- when installing a dual-voltage power supply

4. An instructor has given a student an assignment to assemble a PC. In which situation should the student be aware that ESD is an issue?

- **when installing RAM**
- when working in a corporate environment that has carpet installed under tower PCs
- when using a grounded mat and working on a computer on an ungrounded workbench
- when installing a dual-voltage power supply

Case 2:

- when walking across a carpeted area and then touching a keyboard that is attached to a tower PC
- when installing a UPS
- when working in a corporate environment that has carpet installed under tower PCs
- **when replacing a mechanical hard drive with an M.2 SSD**

Case 3:

- when using a grounded mat and working on a computer on an ungrounded workbench
- when working in a corporate environment that has carpet installed under tower PCs
- **when installing a processor**
- when walking across a carpeted area and then touching a keyboard that is attached to a tower PC

5. What two motherboard components control the system boot operations? (Choose two.)

- **BIOS chip**
- **UEFI chip**
- Northbridge chip
- Southbridge chip
- CPU

Explanation: System boot services are provided by the motherboard BIOS and UEFI chips.

6. A technician is upgrading an ATX motherboard with another ATX motherboard. Which component might be affected by this and need to be upgraded and bought as an additional purchase?

- BIOS
- chipset
- CMOS battery
- **CPU**
- PCIe adapter

Explanation: The motherboard, CPU, and power supply must be compatible.

7. A customer has requested that a PC be built that will support eSATA. Which component should be checked to be sure that this feature is supported?

- CPU
- **chipset**
- hard disk
- RAM module

Explanation: The chipset on a motherboard consists of integrated circuits that control how system hardware interacts with the CPU and motherboard. It also provides the capability and features needed, such as the maximum memory supported on the motherboard, multiple USB ports, eSATA connections, surround sound, and video.

8. Which memory module used to hold instructions for booting a PC and loading the OS, but is still used on adapters even though the memory contents cannot be changed?

- RAM
- **ROM**
- cache
- main memory

Explanation: ROM stands for read-only memory.

9. What is a characteristic of DDR SDRAM?

- **It transfers data twice per clock cycle compared to once per clock cycle for SDRAM.**
- DDR SDRAM modules have double the number of pins of SDRAM memory modules.
- It is dynamic memory whereas SDRAM is static memory.
- It operates at double the voltage of SDRAM memory.

Explanation: DDR SDRAM transfers data twice per clock cycle, whereas SDRAM transfers data once each clock cycle. Both DDR SDRAM and SDRAM are forms of dynamic memory. The difference in data transfer rate between DDR SDRAM and SDRAM is not determined by the number of pins, nor the operating voltage.

10. What are two safety hazards when dealing with laser printers? (Choose two.)

- **high voltage**
- **hot components**
- heavy metals
- proprietary power bricks
- unwieldy card cages

Explanation: Laser printers require high voltage when initially powered on and to charge the drum in preparation for writing data to the drum. This high voltage requirement is why most laser printers are not normally connected to a UPS. A laser printer also has a fuser assembly used to apply heat and pressure to the toner to permanently attach it to the paper. The laser printer must be unplugged and the fuser assembly must be allowed to cool before working inside the printer.

11. Which component requires a technician to install screws externally through the PC case?

- RAM
- CPU
- motherboard
- **power supply**

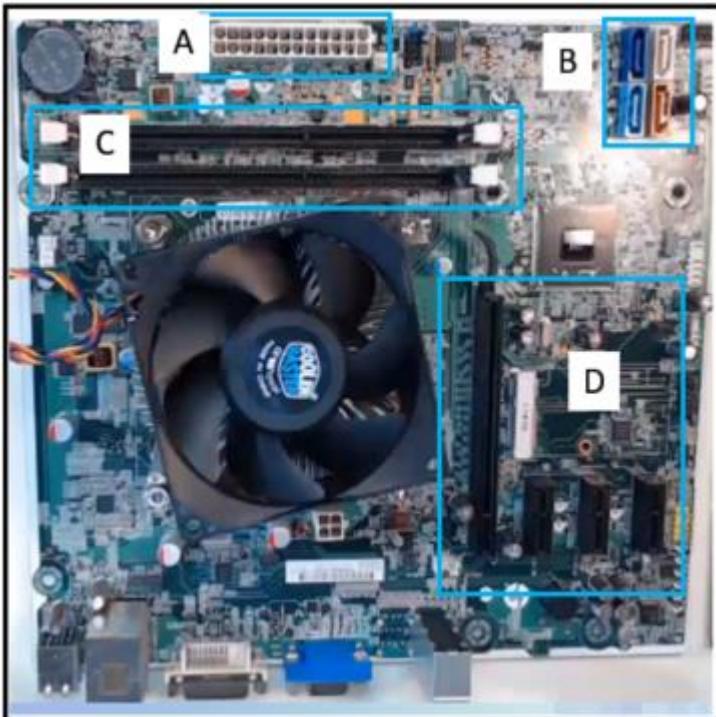
Explanation: The power supply commonly has four screws that attach from outside the case through case holes into screw holes on the power supply.

12. A technician is installing an internal HDD. To which motherboard connector will the technician connect the data cable?

- ATX
- PCI
- PWR_SW
- **SATA**

Explanation: Internal hard drives are commonly SATA drives that have a data cable that extends from the drive to a motherboard SATA connector..

13. Refer to the exhibit. A technician has been asked to install a video card. Which section of the motherboard will the technician use to install the card?



- section A
- section B
- section C
- **section D**

Explanation: Graphics cards, also known as video cards, are installed into a PCIe x16 expansion slot. The expansion slots on a motherboard are located near the motherboard ports.

14. When a PC is being assembled, what component is connected to the motherboard with a SATA cable?

- **the optical drive**
- the network interface card
- the video card
- the power supply

Explanation: SATA cables, or serial ATA cables, are used to carry data from drives to the motherboard.

15. A technician is troubleshooting a computer that is experiencing hardware failure detected by the BIOS. What is one way this failure is indicated?

- The computer automatically boots into Safe Mode and displays a warning on the screen.
- The screen flashes with a red background and displays a warning message.
- **The computer emits a pattern of beeps indicating the failing device.**
- The computer returns an error message that indicates the I/O address of the failing device.

Explanation: Beep codes are a result of POST and these vary between computer vendors based on what BIOS is installed.

16. Which three features can be configured in the BIOS settings to secure a computer? (Choose three.)

- MAC filtering
- **drive encryption**
- **TPM**
- file encryption
- TKIP key
- **passwords**

Explanation: Passwords, drive encryption, and TPM are BIOS configurable security features. File encryption, TKIP key, and MAC filtering are security features not configured within BIOS.

17. What is the purpose of RAID adapters?

- to allow older PCI technology expansion slots to be used
- to provide enhanced audio and graphic capabilities
- **to connect multiple storage devices for redundancy or speed**
- to connect peripheral devices to a PC to improve performance

Explanation: RAID 0 allows “striping” or writing data across two hard drives, but provides no redundancy. The other RAID versions provide redundancy.

18. When a new motherboard is being installed, between which two components must thermal compound be applied? (Choose two.)

- **CPU**
- RAM
- chassis
- **heat sink**
- chipset
- motherboard

Explanation: You must apply thermal compound between the new CPU and the heat sink/fan assembly to avoid overheating the CPU. The thermal paste helps to conduct heat from the CPU to the heat sink.

19. What is the purpose of a Safety Data Sheet?

- **to specify procedures for dealing with potentially hazardous materials**
- to specify procedures in designing and building common computer systems
- to specify procedures for the operation of sensitive components and prevention of electrostatic discharge
- to specify procedures in the use of humidity control and prevention of moisture damage

Explanation: A Safety Data Sheet is a fact sheet that summarizes information about material identification, including hazardous ingredients that can affect personal health, fire hazards, and first-aid requirements. The SDS explains how to dispose of potentially hazardous materials in the safest manner.

20. Which negative environmental factor does cleaning the inside of a computer reduce?

- **dust**
- EMI
- rust
- ESD

Explanation: Accumulated dust inside the computer can prevent the flow of air and can hinder cooling.

21. What is a recommended procedure to follow when cleaning computer components?

- Remove the CPU before cleaning.
- Blow compressed air on cooling fans so that they will spin when dust is being removed.
- Use window cleaner on LCD screens.
- **Hold cans of compressed air upright while spraying.**

Explanation: When using compressed air, keep the can upright to prevent the fluid from leaking onto computer components.

22. On the production floor, a furniture plant has laptops for process monitoring and reporting. The production floor environment is around 80 degrees Fahrenheit (27 degrees Celsius). The humidity level is fairly high around 70 percent. Fans are mounted in the ceiling for air circulation. Wood dust is prevalent. Which condition is most likely to adversely affect a laptop that is used in this environment?

- the temperature
- the humidity
- the air flow
- **the dust**

Explanation: Most laptops are created to be tolerant of a wide range of humidity levels and room temperatures. Dust, however, can cause overheating and failures.

23. After a technician tests a theory of probable causes, what two actions should the technician take if the testing did not identify an exact cause? (Choose two.)

- Establish a new theory of probable causes.
- Randomly replace components one at a time until the problem is solved.
- Document each test tried that did not correct the problem.
- Verify full system functionality.
- Test all remaining possible causes starting with the most complex.

Explanation: If the exact cause of the problem has not been determined after you have tested all your theories, establish a new theory of probable causes and test it.

24. What would happen if a PC that contains a power supply that does not automatically adjust for input voltage is set to 230 volts and attaches to an outlet in the United States?

- The power supply would explode.
- The PC would not turn on.
- The PC would display an error code.
- The PC would emit a series of beeps.

Explanation: In the United States, the wall outlet electrical power is standardized at 120 volts AC.

25. Which type of network spans a single building or campus and provides services and applications to people within a common organizational structure?

- PAN
- WAN
- LAN
- MAN

Explanation: A LAN is smaller or more contained than a WAN, which can span several cities. A MAN is usually contained in one city. A PAN is a very small network of devices that are located in close proximity to one another, usually within range of a single person.

26. What are two types of wired high-speed Internet connections? (Choose two.)

- cable
- satellite
- cellular
- DSL
- dial-up

Explanation: Cable and DSL Internet technologies both use physical cabling to provide an Internet connection to a residence or a small business. Although dial-up is a wired technology, it does not provide a high-speed Internet connection. Satellite and cellular connections provide a wireless Internet connection.

27. In what two situations would UDP be better than TCP as the preferred transport protocol? (Choose two.)

- when applications need to guarantee that a packet arrives intact, in sequence, and unduplicated
- **when a faster delivery mechanism is needed**
- when delivery overhead is not an issue
- **when applications do not need to guarantee delivery of the data**
- when destination port numbers are dynamic

Explanation: UDP is a very simple transport layer protocol that does not guarantee delivery. Devices on both ends of the conversation are not required to keep track of the conversation. UDP is used as the transport protocol for applications that need a speedy, best-effort delivery.

28. The current IP configuration of a small company is done manually and is time-consuming. Because of increased network growth, a technician needs a simpler way for IP configuration of workstations. Which service would simplify the workstation IP configuration task?

- APIPA
- **DHCP**
- DNS
- ICMP

Explanation: In networks with more than a few hosts, DHCP simplifies the addressing process. A DHCP server automatically assigns host IP addresses.

29. A company is looking for a next-generation firewall that provides VPN functionality, IDS/IPS functionality, and DoS/DDoS protection. Which device would be best suited for this task?

- multipurpose device
- router
- endpoint management server
- **UTM**
- TPM

Explanation: A universal threat management (UTM) device is a security device that can provide firewall, IDS/IPS, and proxy server functionality as well as email filtering and DoS/DDoS protection.

30. A student is helping a friend with a home computer that can no longer access the Internet. Upon investigation, the student discovers that the computer has been assigned the IP address 169.254.100.88. What could cause a computer to get such an IP address?

- static IP addressing with incomplete information
- interference from surrounding devices
- reduced computer power supply output
- **unreachable DHCP server**

Explanation: When a PC does not have a static IP address or cannot pick one up from a DHCP server, Windows will automatically assign the PC an IP

address using APIPA, that uses the range of addresses 169.254.0.0 to 169.254.255.255.

31. What three values must be added to the IPv4 properties of a NIC in order for a computer to have basic connectivity with the network? (Choose three.)

- **subnet mask**
- DHCP server address
- domain name
- **default gateway**
- speed and duplex
- **IP address**

Explanation: The IP address, subnet mask, and default gateway address values should be added to the NIC properties in order for the computer to have basic network connectivity. This can be done either statically or dynamically with DHCP. An additional value that should be present if the computer is to be used to connect to the Internet is the DNS server value. A computer automatically attempts to locate a DHCP server if configured to do so. A DHCP server address is not used. Finally, NAT is configured on a router, not on a computer host, and speed and duplex settings are NIC hardware settings and not IPv4 properties of the NIC.

32. A device has an IPv6 address of

2001:0DB8:75a3:0214:0607:1234:aa10:ba01 /64. What is the host identifier of the device?

- 2001:0DB8:75a3
- **0607:1234:aa10:ba01**
- 2001:0DB8
- ba01

Explanation: An IPv6 address is made up of 128 bits that are represented as eight blocks of four hexadecimal digits that are called hextets. Because each hexadecimal digit represents four bits, each hextet represents 16 bits. The /64 network prefix indicates that the first 64 bits, or first four hextets, represent the network portion of the address. Because there are 128 bits in an IPv6 address, this leaves the last 64 bits, or last four hextets, to represent the host identifier. The value for the last four hextets is 0607:1234:aa10:ba01.

33. How can a user prevent specific applications from accessing a Windows computer over a network?

- Enable MAC address filtering.
- Disable automatic IP address assignment.
- **Block specific TCP or UDP ports in Windows Firewall.**
- Change default usernames and passwords.

Explanation: Network applications have specific TCP or UDP ports that can be left open or blocked in Windows Firewall. Disabling automatic IP address assignment may result in the computer not being able to connect to the network at all. Enabling MAC address filtering is not possible in Windows and would only block specific network hosts, not applications. Changing default

usernames and passwords will secure the computer from unauthorized users, not from applications.

34. Place the six stages of the troubleshooting process in the correct order.

Test the theory to determine the cause.

Step 1

Verify full system functionality and if applicable, implement preventive measures.

Identify the problem.

Identify the problem.



Step 2

Document findings, actions, and outcomes.

Establish a theory of probable cause.

Establish a theory of probable cause.

Establish a plan of action to resolve the problem and implement the solution.

Step 3

Test the theory to determine the cause.

Step 4

Establish a plan of action to resolve the problem and implement the solution.

Step 5

Verify full system functionality and if applicable, implement preventive measures.

Step 6

Document findings, actions, and outcomes.

35. A technician has been asked to configure Wi-Fi calling on a corporate mobile device. In which situation would this feature be most advantageous?

- in an emergency situation and no minutes are left on the phone
- when sending WEA updates
- **when in an area with poor cellular coverage**
- in a store transaction making a payment using the mobile device

Explanation: Wi-Fi calling is not supported on all mobile devices, but when enabled, it uses a Wi-Fi network to make voice calls. It is very useful in areas with poor cellular coverage.

36. Which statement is true about laptops?

- **Most of the internal components that are designed for laptops cannot be used for desktops.**
- Laptop motherboards have standard form factors.
- Laptops use fewer components than desktops use.
- Laptop CPUs do not use cooling devices.

Explanation: Laptop internal components are designed with a small form factor and are proprietary. Although a laptop CPU uses less power, it needs a cooling device (heat sink and fan).

37. Which standard provides a bridge between laptop hardware and the operating system and a way for technicians to configure power management schemes to get the best performance?

- **ACPI**
- PCIe
- Bluetooth
- 802.11

Explanation: The Advanced Configuration and Power Interface (ACPI) standard has specific sleep states that can be assigned to a device in order to conserve power. PCIe is a motherboard interface. Bluetooth and 802.11 are wireless standards.

38. Which two laptop components are considered replaceable by the customer. (Choose two.)

- **battery**
- integrated card reader
- mini PCIe module
- **RAM**
- display

Explanation: Customer-replaceable units (CRUs) do not typically require a lot of technical skill to replace. RAM and a battery are two examples of a CRU. In contrast, a field-replaceable unit (FRU), such as a display, motherboard, keyboard, or touchpad, commonly requires a technician to install.

39. A user wants to synchronize some apps, movies, music, and ebooks between mobile devices. What are the two types of connections used to synchronize this type of data? (Choose two.)

- cellular
- **Wi-Fi**
- **USB**
- Bluetooth
- NFC

Explanation: Because of the amount of data transferred during video synchronization, synchronization occurs through either a Wi-Fi connection or a wired USB connection.

40. A technician is explaining the differences between inkjet printers and laser printers to a customer. Which two comparisons should the technician make? (Choose two.)

- Inkjet printers are less expensive as an initial purchase than laser printers.
- A laser printer is significantly slower than an inkjet printer.
- Both laser and inkjet printers produce poor quality images.
- The laser printer output is dry after printing, but an inkjet printer may still have wet ink on the paper after printing.
- Inkjet printers use plain paper to make economical prints, but laser printers require more expensive thermal paper.

Explanation: Inkjet printers are easy to use and usually less expensive than laser printers. Some advantages of an inkjet printer are initial low cost, high resolution, and they are quick to warm up. Some disadvantages of an inkjet printer are that the nozzles are prone to clogging, ink cartridges can be expensive, and the ink is wet for a few seconds after printing.

A laser printer is a high-quality, fast printer that uses a laser beam to create an image. Some advantages of a laser printer are low cost per page, high ppm, high capacity, and prints come out dry. Some disadvantages of a laser printer are high cost of startup, and that toner cartridges can be expensive.

41. A user chooses the collate option and prints two copies of a three-page document. What is the order in which the pages are printed?

- pages 1, 1, 2, 2, 3, 3
- **pages 1, 2, 3, 1, 2, 3**
- pages 3, 3, 2, 2, 1, 1
- pages 3, 2, 1, 3, 2, 1

Explanation: The collate feature enables a printer to sort multiple copies of a document with the proper page order for each copy.

42. A color laser printer is used to print documents with graphics and photographs. Users are complaining that printing takes too long. Which component of the printer should be upgraded in order to improve printing performance?

- CPU
- **RAM**
- hard drive
- toner cartridges

Explanation: Because documents with graphics and photographs generate much larger print jobs, the printing process will run more efficiently if the printer memory is adequate to store the entire job before the job starts.

43. What service is available for Windows to provide software print server services to MAC OS clients?

- **Bonjour Print Server**
- Print to XPS
- Apple AirPort Extreme
- Apple AirPrint

Explanation: Bonjour Printer Server from Apple comes with MAC OS X and is a free download for Windows users to be used as a software print server. Airport Extreme, a dedicated print server, and a PC with a printer attached serving as a print server are all hardware print sharing solutions.

44. Which three components are typically found in laser printer maintenance kits? (Choose three.)

- **fuser assembly**
- primary corona
- **pickup rollers**
- **transfer rollers**
- secondary corona
- paper trays

Explanation: Laser printer maintenance kits typically contain components that wear and can be installed with minimal disassembly of the printer. Corona wires are internal components that would require a trained technician to replace. Paper trays are components that are not typically replaced during maintenance, but would be replaced any time if damaged.

45. A technician is installing a new printer in a cool, damp environment. After the printer cabling is done, and the software and print driver are installed, the printer test page jams. What is the most likely cause of the print failure?

- incorrect printer driver
- **too much humidity**
- not enough printer memory
- loose printer cables

Explanation: Paper jams are commonly caused when the paper being used is dirty, affected by humidity, or is the wrong type of paper for the printer.

46. A data center has recently updated a physical server to host multiple operating systems on a single CPU. The data center can now provide each customer with a separate web server without having to allocate an actual discrete server for each customer. What is the networking trend that is being implemented by the data center in this situation?

- BYOD
- **virtualization**
- maintaining communication integrity
- online collaboration

Explanation: Virtualization technology can run several different operating systems in parallel on a single CPU.

47. How does virtualization help with disaster recovery within a data center?

- Power is always provided.
- Less energy is consumed.
- Server provisioning is faster.
- **Hardware does not have to be identical.**

Explanation: Disaster recovery is how a company goes about accessing applications, data, and the hardware that might be affected during a disaster. Virtualization provides hardware independence which means the disaster recovery site does not have to have the exact equipment as the equipment in production. Server provisioning is relevant when a server is built for the first time. Although data centers do have backup generators, the entire data center is designed for disaster recovery. One particular data center could never guarantee that the data center itself would never be without power.

48. Which two hypervisors are suitable to support virtual machines in a data center? (Choose two.)

- Virtual PC
- VMware Fusion
- **VMware ESX/ESXi**
- Oracle VM VirtualBox
- **Microsoft Hyper-V 2012**

Explanation: VMware ESX/ESXi and Microsoft Hyper-V 2012 are Type 1 hypervisors that have direct access to the hardware resources. Type 1 hypervisors are more efficient than hosted architectures, and enable greater scalability, performance, and robustness. They are used to support enterprise VMs in data centers. Oracle VM VirtualBox, VMware Fusion, and Microsoft Virtual PC are host based Type 2 hypervisors.

49. A web designer accesses a company Windows 10 computer remotely. The designer often needs to simultaneously open multiple applications, such as a web page editor and a graphics editor. Rather than opening them in multiple windows, the designer opens them in different virtual desktops. What technology is being used by the designer?

- virtual reality
- **Windows Virtual Desktop**
- cloud-based applications
- virtual desktop infrastructure

Explanation: Windows 10 has a feature called Windows Virtual Desktop (WVD). A user can create multiple virtual desktops and navigate among them easily. This feature reduces the clutter on a desktop of Windows caused by opening multiple applications. With WVD, a user can have each application open in a separate desktop.

50. Which Cloud computing service would be best for an organization that needs to collaboratively create applications and deliver them over the web?

- **PaaS**
- IaaS
- SaaS

- ITaaS

Explanation: Platform as a service (PaaS) provides a collaborative environment where multiple developers can create software and host an application through a Cloud provider.

51. Which statement describes a feature of SDRAM?

- It requires constant power to function.
- Its connector always has 240 pins.
- **It can process overlapping instructions in parallel.**
- It is able to support two writes and two reads per CPU clock cycle.

Explanation: SDRAM (Synchronous Dynamic RAM) works in synchronization with the memory bus and has higher transfer rates because it can process overlapping instructions in parallel.

52. Match the memory type to the feature. (Not all options are used.)

DDR SDRAM	It's connector has 288 pins and has advanced error correction features available.
DDR3 SDRAM	DDR4 SDRAM
GDDR SDRAM	It's connector has 184 pins and is able to support two writes and two reads per CPU clock cycle.
DDR2 SDRAM	DDR SDRAM
DDR4 SDRAM	It's connector has 240 pins and consumes 1.5 Volts of power.
	DDR3 SDRAM
	It's connector has 240 pins and consumes 1.8 Volts of power.
	DDR2 SDRAM

53. A technician is troubleshooting a server that displays the error message “RAID not found” after a power outage over the weekend. What is a possible cause for this?

- The BIOS firmware needs updating.
- The FSB settings have changed and are wrong.

- **The external RAID controller is not receiving power.**
- The CPU multiplier is set too high.

Explanation: The loss of the RAID controller can be caused by the external RAID controller not receiving power, incorrect BIOS settings, failure of the RAID controller or incorrect drivers for the RAID controller.

54. A customer brings in a laptop with a touch screen that is not working correctly. The touch screen either does not respond at all or provides unusual or inaccurate responses. What is a possible cause for such behavior?

- The battery is not seated properly.
- The DC jack is not grounded or is loose.
- The digitizer is faulty.
- **Too many apps are open.**

Explanation: A touch screen that is unresponsive or inaccurate can be caused by dirt or grease on the screen, the screen protector, or apps consuming too many resources.

55. What are two security risks associated with sharing printers in a corporate environment? (Choose two.)

- **user authentication**
- **cached files**
- document viewing in the print queue
- dumpster diving
- shoulder surfing

Explanation: Three security concerns related to shared printers include (1) cached print files could contain sensitive data; (2) user authentication is needed to control access to the printer; and (3) print jobs could be read by others, intercepted, copied, or modified. Although the names of documents can be viewed in the print queue, document viewing is not possible. Dumpster diving and shoulder surfing are security concerns whether the printer is shared or not.

56. Which change management process component is concerned with the business processes that are affected by changes?

- **assessment**
- approval
- implementation
- identification

Explanation: There are several change management process components that help changes, installations, and upgrades go more easily. The assessment component identifies the business processes that are affected and the costs and resources required.

57. Match the problem to the possible solution. (Not all options are used.)

The PCI NIC adapter card has stopped working.	Replace the motherboard.
The computer does not display any video after installing a new PCIe video card.	<input checked="" type="checkbox"/> The motherboard capacitors are distended, swollen, emitting residue, or bulging.
The user can hear the fans spinning but the PC will not start and there are no beeps from the speaker.	<input checked="" type="checkbox"/> Check for faulty cable, damaged or mis-seated CPU or other motherboard component prior to replacing the motherboard if required.
The motherboard capacitors are distended, swollen, emitting residue, or bulging.	<input checked="" type="checkbox"/> The user can hear the fans spinning but the PC will not start and there are no beeps from the speaker.
After upgrading the single core CPU to a dual core CPU only one CPU graph is seen in the task manager.	<input checked="" type="checkbox"/> Update the BIOS firmware.
	<input checked="" type="checkbox"/> After upgrading the single core CPU to a dual core CPU only one CPU graph is seen in the task manager.
	<input checked="" type="checkbox"/> Connect the auxiliary power cable for the adapter card.
	<input checked="" type="checkbox"/> The computer does not display any video after installing a new PCIe video card.

58. A computer technician is installing a RAID. If the RAID uses mirroring and striping, which RAID level is the technician using?

- **10**
- 5
- 1
- 8

Explanation: RAID Levels:

RAID Level	Minimum Number of Drives	Features
0	2	Striping

1	2	Mirroring
5	3	Striping with parity
6	3	Striping with double parity
10 (0+1)	4	Mirroring and Striping

59. A computer technician is installing a RAID. If the RAID uses mirroring, which RAID level is the technician using?

- 1
- 6
- 5
- 3

Explanation: RAID Levels:

RAID Level	Minimum Number of Drives	Features
0	2	Striping
1	2	Mirroring
5	3	Striping with parity
6	3	Striping with double parity
10 (0+1)	4	Mirroring and Striping

60. A computer technician is installing a RAID. If the RAID uses striping with parity, which RAID level is the technician using?

- 5
- 6
- 1
- 4

Explanation: RAID Levels:

RAID Level	Minimum Number of Drives	Features
0	2	Striping
1	2	Mirroring
5	3	Striping with parity
6	3	Striping with double parity
10 (0+1)	4	Mirroring and Striping

61. A computer technician is installing a RAID. If the RAID uses striping, which RAID level is the technician using?

- 0
- 6
- 5
- 2

Explanation: RAID Levels:

RAID Level	Minimum Number of Drives	Features
0	2	Striping
1	2	Mirroring
5	3	Striping with parity
6	3	Striping with double parity
10 (0+1)	4	Mirroring and Striping

62. A computer technician is installing a RAID. If the RAID uses striping with double parity, which RAID level is the technician using?

- 6
- 1
- 5
- 7

Explanation: RAID Levels:

RAID Level	Minimum Number of Drives	Features
0	2	Striping
1	2	Mirroring
5	3	Striping with parity
6	3	Striping with double parity
10 (0+1)	4	Mirroring and Striping

63. A technician is upgrading many PCs used within the company. How should the technician dispose of an old battery?

- Throw it away.
- Take it to the garbage dump.
- Burn it.
- **Recycle following local regulations.**

64. A technician is upgrading many PCs used within the company. How should the technician dispose of a broken monitor?

- Bury it.

- **Recycle following local regulations.**
- Take it to the garbage dump.
- Burn it.

65. A technician is upgrading many PCs used within the company. How should the technician dispose of an old power supply?

- Burn it.
- Take it to the garbage dump.
- **Recycle following local regulations.**
- Bury it.

66. A technician is upgrading many PCs used within the company. How should the technician dispose of old RAM?

- Destroy it with a hammer.
- Burn it.
- Bury it.
- **Recycle following local regulations.**

67. A technician is upgrading many PCs used within the company. How should the technician dispose of an old motherboard?

- Seal in a plastic bag before putting in the garbage.
- **Recycle following local regulations.**
- Give it to your neighbor.
- Destroy it with a hammer.

68. A technician is upgrading many PCs used within the company. How should the technician dispose of an old hard drive?

- Seal in a cardboard box.
- Give it to your neighbor.
- Destroy it with a hammer.
- **Recycle following local regulations.**

69. After continuous morning use, a computer suddenly reboots without the intervention of the user. What are the two most likely hardware parts that could cause this problem? (Choose two.)

- **CPU**
- hard drive
- RAID
- **power supply**
- BIOS
- wireless NIC

70. A technician has been called in to investigate a problem with the computer rebooting randomly throughout the day. What two pieces of hardware could cause this problem? (Choose two.)

- **power supply**
- surge strip
- ROM
- wireless NIC
- motherboard
- **CPU**

71. For two days in a row, a user has noticed that the computer reboots several times before it eventually starts. What are two suspect components? (Choose two.)

- **CPU**
- **power supply**
- BIOS
- ROM
- wireless NIC
- motherboard

72. While a user is working on a spreadsheet, the computer reboots. What are two components that could cause this issue? (Choose two.)

- **power supply**
- ROM
- BIOS
- RAID
- **CPU**
- wireless NIC

73. A client packet is received by a server. The packet has a destination port number of 137. What service application is the client requesting?

- **NetBIOS (NetBT)**
- SMB/CIFS
- HTTPS
- SLP

74. A client packet is received by a server. The packet has a destination port number of 22. What service application is the client requesting?

- SMB/CIFS
- HTTPS
- SLP
- **SSH**

75. A client packet is received by a server. The packet has a destination port number of 143. What service application is the client requesting?

- **IMAP**
- SMB/CIFS
- HTTPS
- SLP

76. A client packet is received by a server. The packet has a destination port number of 23. What service application is the client requesting?

- SMB/CIFS
- **Telnet**
- HTTPS
- SLP

77. A client packet is received by a server. The packet has a destination port number of 161. What service application is the client requesting?

- **SNMP**
- SMB/CIFS
- HTTPS

- SLP

78. A client packet is received by a server. The packet has a destination port number of 389. What service application is the client requesting?

- SMB/CIFS
- HTTPS
- SLP
- **LDAP**

79. A client packet is received by a server. The packet has a destination port number of 25. What service application is the client requesting?

- SMB/CIFS
- HTTPS
- **SMTP**
- SLP

80. A client packet is received by a server. The packet has a destination port number of 427. What service application is the client requesting?

- **SLP**
- SMB/CIFS
- SMTP
- DNS

81. A client packet is received by a server. The packet has a destination port number of 53. What service application is the client requesting?

- SMTP
- DHCP
- TFTP
- **DNS**

82. Which is the compressed format of the IPv6 address

2001:0db8:0000:0000:0000:a0b0:0008:0001?

- 2001:db80:0:1::80:1
- **2001:db8::a0b0:8:1**
- 2001:db8::ab8:1:0:1000
- 2001:db80::1::80:1

83. Which is the compressed format of the IPv6 address

fe80:09ea:0000:2200:0000:0000:0fe0:0290?

- **fe80:9ea:0:2200::fe0:290**
- fe80:9:20::b000:290
- fe80:9ea0::2020:0:bf:e0:9290
- fe80:9ea0::2020::bf:e0:9290

84. Which is the compressed format of the IPv6 address

2002:0042:0010:c400:0000:0000:0909?

- 200:420:110:c4b::910:0:90
- 2002:4200::25:1090:0:99
- 2002:42::25:1090:0:99
- **2002:42:10:c400::909**

85. Which is the compressed format of the IPv6 address

2002:0420:00c4:1008:0025:0190:0000:0990?

- 2002:4200::25:1090:0:99

- **2002:420:c4:1008:25:190::990**
- 2002:42:10:c400::909
- 2002:42::25:1090:0:99

86. Which is the compressed format of the IPv6 address

2001:0db8:0000:0000:0ab8:0001:0000:1000?

- 2001:db8::a0b0:8:1
- 2001:db8:1::ab8:0:1
- 2001:db8:0:1::8:1
- **2001:db8::ab8:1:0:1000**

87. Which is the compressed format of the IPv6 address

fe80:0000:0000:0000:0220:0b3f:f0e0:0029?

- **fe80::220:b3f:f0e0:29**
- fe80:9ea0::2020:0:bf:e0:9290
- fe80:9ea:0:2200::fe0:290
- fe80:9ea0::2020::bf:e0:9290

88. Which is the compressed format of the IPv6 address

fe80:9ea0:0000:2020:0000:00bf:00e0:9290?

- fe80:9:20::b000:290
- fe80:9ea:0:2200::fe0:290
- **fe80:9ea0::2020:0:bf:e0:9290**
- fe80::0220:0b3f:f0e0:0029

89. What ACPI power state describes when the CPU and RAM are off and the contents of RAM have been saved to a temporary file on the hard drive?

- **S4**
- S1
- S2
- S3

90. What ACPI power state describes when the CPU and RAM are still receiving power but unused devices are powered down?

- **S1**
- S2
- S3
- S4

91. What ACPI power state describes when the CPU is off, but the RAM is refreshed?

- S1
- **S2**
- S3
- S4

92. What ACPI power state describes when the computer is off?

- S1
- S2
- S3
- **S5**

93. What ACPI power state describes when the CPU is off and the RAM is set to a slow refresh rate, often called suspend mode?

- S4
- S2
- **S3**
- S5

94. What ACPI power state describes when the computer is on and the CPU is running?

- **S0**
- S4
- S3
- S5

95. A reporter is trying to print several high resolution photographs but the color laser printer is going extremely slowly. What should the technician do to resolve the issue?

- Rewind the ribbon.
- Connect the printer using wireless.
- Install a USB hub.
- **Add more RAM to the printer.**
- Update the BIOS.

96. A new printer has just been installed deep in a mine. When test pages are printed, the paper constantly jams. What should the technician do to resolve the issue?

- **Move the printer to a less-humid location.**
- Clean the printer.
- Connect the printer using wireless.
- Install a USB hub.
- Update the BIOS.

97. A user complains that recently every printed document has vertical lines and streaks on the paper. What should the technician do to resolve the issue?

- **Distribute the toner more evenly within the cartridge.**
- Clean the printer.
- Connect the printer using wireless.
- Install a USB hub.
- Update the BIOS.

98. A school is installing a new shared printer but the printer is not showing up on the list of available printers. What should the technician do to resolve the issue?

- Reset the page counter.
- **Manually add the printer IP address.**
- Connect the printer using wireless.
- Install a USB hub.
- Update the BIOS.

99. Employees are complaining that they send print jobs to a newly installed printer but the print jobs never print. What should the technician do to resolve the issue?

- **The printer is connected to the wrong port. Modify the port.**

- Check the vibration of the crystals.
- Connect the printer using wireless.
- Install a USB hub.
- Update the BIOS.

100. Users have noticed that the colors on their printed documents are different from the colors that they see on their computer screens. What should the technician do to resolve the issue?

- Install a USB hub.
- Reset the page counter.
- Check the vibration of the crystals.
- Connect the printer using wireless.
- **Calibrate the printer.**

101. A technician has just completed a preventive maintenance on the department printer. Users are now complaining that the printer is no longer available. What should the technician do to resolve the issue?

- **Check that the printer is plugged into a power source.**
- Connect the printer using wireless.
- Reset the page counter.
- Check the vibration of the crystals.
- Install a USB hub.

102. Employees of a small business are complaining that the printer is printing faded images. What should the technician do to resolve the issue?

- **Replace the toner cartridge.**
- Update the BIOS.
- Reset the page counter.
- Check the vibration of the crystals.
- Install a USB hub.

103. A photographer is complaining about the following printer issue: The printer issues a “Document failed to print” message. What are two possible causes of this issue? (Choose two.)

- **A cable is loose or disconnected.**
- The paper tray is flimsy.
- **The printer is no longer shared.**
- The laser printer is emitting too much radiation.
- The wrong printer type has been selected.

104. A reporter is complaining about the following printer issue: The printer is printing unknown characters. What are two possible causes of this issue? (Choose two.)

- **The wrong or an outdated printer driver is installed.**
- The laser printer is emitting too much radiation.
- The printer has been installed on the wrong port.
- The paper tray is flimsy.
- **The printer has a loose connection.**

Explanation: Advanced Problems and Solutions for Printers

105. A manager is complaining about the following printer issue: The printer is printing incorrect colors. What are two possible causes of this issue? (Choose two.)

- **An incorrect cartridge could be installed.**
- The printer is using the wrong cable.
- The printer has been installed on the wrong port.
- **The print heads might need to be cleaned and calibrated.**
- The paper tray is flimsy.

Explanation: 8.5.8.2 Common Problems and Solutions for Printers

106. A technician is complaining about the following printer issue: The print appears faded on the paper. What are two possible causes of this issue? (Choose two.)

- **The paper might be incompatible with the printer.**
- The wrong printer type has been selected.
- The printer has been installed on the wrong port.
- The paper tray is flimsy.
- **The toner cartridge is low.**

Explanation: 8.5.8.2 Common Problems and Solutions for Printers

107. A librarian is complaining about the following printer issue: The printer control panel displays no image. What are two possible causes of this issue? (Choose two.)

- **The contrast of the screen may be set too low.**
- **The printer is not turned on.**
- The room temperature is above normal.
- The printer has been installed on the wrong port.
- The paper tray is flimsy.

Explanation: 8.5.8.2 Common Problems and Solutions for Printers

108. A teacher is complaining about the following printer issue: The paper is creased after printing. What are two possible causes of this issue? (Choose two.)

- **The paper-feed tray might not be firmly adjusted against the edges of the printer.**
- Print jobs are being sent to the wrong printer.
- The printer has been installed on the wrong port.
- **The paper might be loaded incorrectly.**
- The paper tray is flimsy.

Explanation: 8.5.8.2 Common Problems and Solutions for Printers

109. A receptionist is complaining about the following printer issue: My impact printer produces faded or light characters. What are two possible causes of this issue? (Choose two.)

- **The ribbon may be worn out.**
- **The ribbon may be damaged.**
- The print queue is overloaded.
- The printer has been installed on the wrong port.

- The paper tray is flimsy.

110. A photographer is complaining about the following printer issue: The paper is not being fed into the printer. What are two possible causes of this issue? (Choose two.)

- **The paper may be wrinkled.**
- The paper tray is flimsy.
- **The printer could be set to print to a different paper size than is currently loaded.**
- The printer has been installed on the wrong port.
- The printer service is stopped or not working properly.

Explanation: 8.5.8.2 Common Problems and Solutions for Printers

111. A laptop has an NVMe drive (C:) and a mechanical hard drive (D:). When the user tries to save a spreadsheet to the D: drive, the user notices that the D: drive is not there. What should the technician do to see if the drive is recognized by the operating system?

- Use the Msconfig utility.
- Boot into UEFI/BIOS and see if the drive appears.
- Remove the drive and attach it to the SATA port used by the SSD. Reboot the computer and see if the drive is recognized.
- **Use the Disk Management Control Panel.**

112. A computer has two mechanical hard drives. The second drive (D:) is used for data storage. When trying to save an email attachment to the local hard drive, the user notices that the D: drive is not an option. What should the technician do to see if the drive is recognized by the operating system?

- **Use File Explorer.**
- Swap the data cables of the mechanical drive and the SSD.
- Open a web browser and type the following: <http://127.0.0.1>. Verify if both drives appear in the list.
- Bring up a command prompt and type ipconfig.

113. A user reports that a drive is no longer there. The technician asks the user to demonstrate the problem. Within the application, the user demonstrates that the drive, that was present in the save options yesterday, is now no longer an option. What should the technician do to see if the drive is recognized by the operating system?

- **Use Device Manager.**
- Check the Startup folder.
- Bring up a command prompt and type ipconfig.
- Swap the data cables of the mechanical drive and the SSD.

114. A computer has an SSD for the operating system and applications and uses another mechanical hard drive for data storage. The user reports that data can no longer be saved to the mechanical hard drive. What should the technician do to see if the drive is recognized by the operating system?

- Swap the data cables of the mechanical drive and the SSD.
- **Use File Explorer.**

- Open a web browser and type the following: <http://127.0.0.1>. Verify if both drives appear in the list.
- Bring up a command prompt and type ipconfig.

115. A technician is working on a laptop and the GPS is not functioning.

What is a probable cause for this situation?

- The GPU is overheating.
- **A service is disabled.**
- The screen resolution needs recalibration.
- The screen refresh rate is too low.

116. A technician is working on a laptop and an app is not loading. What is a probable cause for this situation?

- **An app needs to be restarted.**
- More than one app is open simultaneously.
- The screen resolution needs recalibration.
- The screen refresh rate is too low.

117. A technician is working on a laptop and an app is not responding. What is a probable cause for this situation?

- The battery is low.
- The GPU is overheating.
- **An app needs to be restarted.**
- Wi-Fi is turned off.

118. A technician is working on a laptop and an error message about decryption appears when opening an email. What is a probable cause for this situation?

- The display setting is incorrect.
- The GPU is overheating.
- Wi-Fi is turned off.
- **A digital certificate is missing.**

119. A PC technician has been asked by a supervisor to recommend a security solution for a small company that wants stateful firewall services. Which security technique should the technician recommend?

- **Buy an ASA.**
- Disable ports.
- Use a VPN.
- Setup footprinting.

120. A gamer is booting a desktop that has Windows 10 installed on dynamic drives. The boot process is currently working on the following step: WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers. What is the next step that will happen in the boot process?

- **The Windows kernel takes over the boot process.**
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.

- Winload uses the path specified in BOOTMGR to find the boot partition.

Explanation: Boot Sequence for Windows:

- Power on Self Test (POST)
- POST for each adapter card that has a BIOS
- BIOS reads the MBR
- MBR takes over control of the boot process and starts BOOTMGR
- BOOTMGR reads the Boot Configuration Data file to know which OS to load and where to find the OS on the boot partition
- **BOOTMGR invokes WINLOAD.EXE in order to load the NTOSKRNL.EXE file and HAL.DLL**
- **BOOTMGR reads the registry files and loads device drivers**
- **NTOSKRNL.EXE starts the WINLOGON.EXE program and displays the Windows login screen**

At this point, the NT kernel takes over. The NT kernel is the heart of all Windows operating systems. The name of this file is NTOSKRNL.EXE. It starts the login file called WINLOGON.EXE and displays the Windows Welcome screen.

121. A technician is working on a laptop and an error message about decryption appears when opening an email. What is a possible solution for this situation?

- **Install an appropriate certificate.**
- Check the screen refresh rate.
- Ensure that only one app is open at a time.
- Ensure that Wi-Fi is turned off.

122. Users in the sales department want to be able to print from laptops and tablets. Which two wireless technologies should the IT technician look for when researching new printers for the sales department? (Choose two.)

- cellular
- **Bluetooth**
- ZigBee
- NFC
- **802.11 standard**

Explanation: Many printers come with built-in wireless capability which enables them to be connected to a WiFi network (802.11 standard). Some come equipped with the ability to connect to devices through Bluetooth pairing.

123. What are three factors to consider when purchasing a replacement motherboard? (Choose three.)

- **The existing power supply must provide the connections required by the new motherboard.**
- **The new motherboard must be the correct size to physically fit into the existing case.**
- The replacement motherboard must have the same manufacturer as the existing case.

- The new motherboard must come from the same manufacturer as the existing motherboard.
- **The socket and chipset on the new motherboard must match the existing CPU.**
- The new motherboard must support the same UEFI BIOS as the previous motherboard.

Explanation: Because you have to match the motherboard with the parts like power supply form factor, case form factor, cpu socket/chipset, RAM that will remain the same. You replace only the motherboard in this case.

124. What are two features of protocols used within the TCP/IP protocol stack? (Choose two.)

- **TCP mechanisms retransmit data when an acknowledgment is not received from the destination system within a set period of time.**
- **UDP is used when an application must be delivered as quickly as possible and some loss of data can be tolerated.**
- The Internet Layer IP protocol has built in mechanisms for ensuring the reliable transmission and receipt of data.
- The same Transport Layer source port is used for all of the tabs opened at the same time within a web browser.
- TCP and UDP destination port numbers are dynamically generated by the sending device in order to track the responses to requests.

Explanation: Application programmers make decisions about which protocols to use to transport the data to and from their applications based on whether the application can tolerate any lost data. Live streaming and voice transmissions can use UDP because if a few data packets are lost, the quality of the video and audio is not seriously impacted. TCP is used when all data must be complete and accurate.

125. A technician is working on a laptop and a key on the keyboard is not responding as it should. What is a possible solution for this situation?

- **Clean with compressed air.**
- Ensure that Bluetooth is not activated.
- Check the screen refresh rate.
- Check the display settings.

126. What two effects might suggest that an incorrect printer driver is loaded on the Windows PC? (Choose two.)

- **The printer is printing unknown characters.**
- Print jobs appear in the print queue, but are not printed.
- Toner is smearing or rubbing off the page.
- **The printer does not print a test page.**
- Paper jams are occurring frequently.

Explanation: Advanced Problems and Solutions for Printers

127. Why would a network technician change the wireless router IP address to a different private IP address during initial installation?

- to enable the router to become the DHCP server for the network and to perform NAT
- to limit the number of devices and users that can attach to the wireless network
- to ensure that users will have to manually configure the network name in their wireless clients
- **to decrease the likelihood that someone could access the router using the default settings**
- to strengthen the network mode login security and encryption settings

128. A technician is working on a laptop and GPS is not functioning. What is a possible solution for this situation?

- **Verify that airplane mode is not activated.**
- Ensure that Wi-Fi is turned off.
- Check the screen refresh rate.
- Check the display settings.

Case 2:

- **Verify the status of service.**
- Ensure that only one app is open at a time.
- Recharge the battery.
- Check the display settings.

129. Which factor can limit the amount of data that the CPU can receive and process at one time?

- whether CPU virtualization is enabled
- the width of the front side bus (FSB)
- **the size of the CPU cache memory**
- the amount of RAM memory installed

130. Which type of optical drive supports the greatest amount of storage and is able to read and write CDs, DVDs, and Blu-Ray media?

- BD-ROM
- **BD-RE**
- CD-RW
- DVD-RW
- DVD-ROM

Explanation:

Optical Media	Description	Storage Capacity
CD-ROM	CD read-only memory media that is pre-recorded	700 MB 4.7 GB (Single-Layer) 8.5 GB (Dual-Layer)
CD-R	CD recordable media that can be recorded one time	
CD-RW	CD rewritable media that can be recorded, erased, and re-recorded	
DVD-ROM	DVD read-only memory media that is pre-recorded	
DVD-RAM	DVD rewritable media that can be recorded, erased, and re-recorded	
DVD+/-R	DVD recordable media that can be recorded one time	
DVD+/-RW	DVD rewritable media that can be recorded, erased, and re-recorded	
BD-ROM	Blu-ray read-only media that is pre-recorded with movies, games, or software	
BD-R	Blu-ray recordable media that can be recorded one time	
BD-RE	Blu-ray rewritable media that can be recorded, erased, and re-recorded	25 GB (Single-Layer) 50 GB (Dual-Layer)

132. Why would a manager need to use the sfc command?

- **to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions**
- to move that file to a different Windows directory while also leaving the file in the current location
- to copy a group of files from one Windows directory to another
- to relocate a file from one Windows directory to another one

133. Why would a technician need to use the DISM command?

- **to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system**
- to move that file to a different Windows directory while also leaving the file in the current location
- to copy a group of files from one Windows directory to another
- to relocate a file from one Windows directory to another one

134. Why would a technician need to use the tasklist command?

- **to display a list of current processes running on a local or a remote computer**
- to create a new Windows directory
- to remove an empty directory
- to change from the current working folder to another folder

135. Why would an analyst need to use the taskkill command?

- **to end one or more processes on a PC based on process ID or image name**
- to create a new Windows directory
- to remove an empty directory
- to change from the current working folder to another folder

136. Why would an analyst need to use the msconfig command?

- **to select some programs that will automatically run at startup**
- to remove an empty directory
- to erase one or more files from a Windows directory

- to create a new Windows directory

137. Why would an analyst need to use the dir command?

- **to show all of the files in the current directory**
- to remove an empty directory
- to erase one or more files from a Windows directory
- to create a new Windows directory

138. Why would a bank manager need to use the gpupdate command?

- **to make the PC synchronize with new group policy settings**
- to remove an empty directory
- to erase one or more files from a Windows directory
- to create a new Windows directory

139. Why would a bank manager need to use the gpresult command?

- **to verify the settings that are suspected to be incorrect**
- to remove an empty directory
- to erase one or more files from a Windows directory
- to create a new Windows directory

140. Why would a lawyer need to use the cd command?

- **to change from the current working folder to another folder**
- to remove an empty directory
- to erase one or more files from a Windows directory
- to create a new Windows directory

141. Which two activities are normally controlled by the Northbridge part of the chipset? (Choose two.)

- communication between the CPU and the I/O ports
- **access to the RAM**
- communication between the CPU and the hard drive
- **access to the video card**
- communication between the CPU and the sound card

Explanation: The Northbridge chipset generally controls access to the RAM, video card, and the speeds at which the CPU can communicate with them.

142. A manager is booting a tablet that has Windows 8 installed. The boot process is currently working on the following step: WINLOGON.EXE displays the Windows Welcome screen. What is the next step that will happen in the boot process?

- **There are no more steps, the boot process is complete.**
- The BIOS boots the computer using the first drive that contains a valid boot sector.
- The code in the boot sector is executed and the control of the boot process is given to Windows Boot Manager.
- Winload uses the path specified in BOOTMGR to find the boot partition.

Explanation: Boot Sequence for Windows:

- Power on Self Test (POST)
- POST for each adapter card that has a BIOS
- BIOS reads the MBR

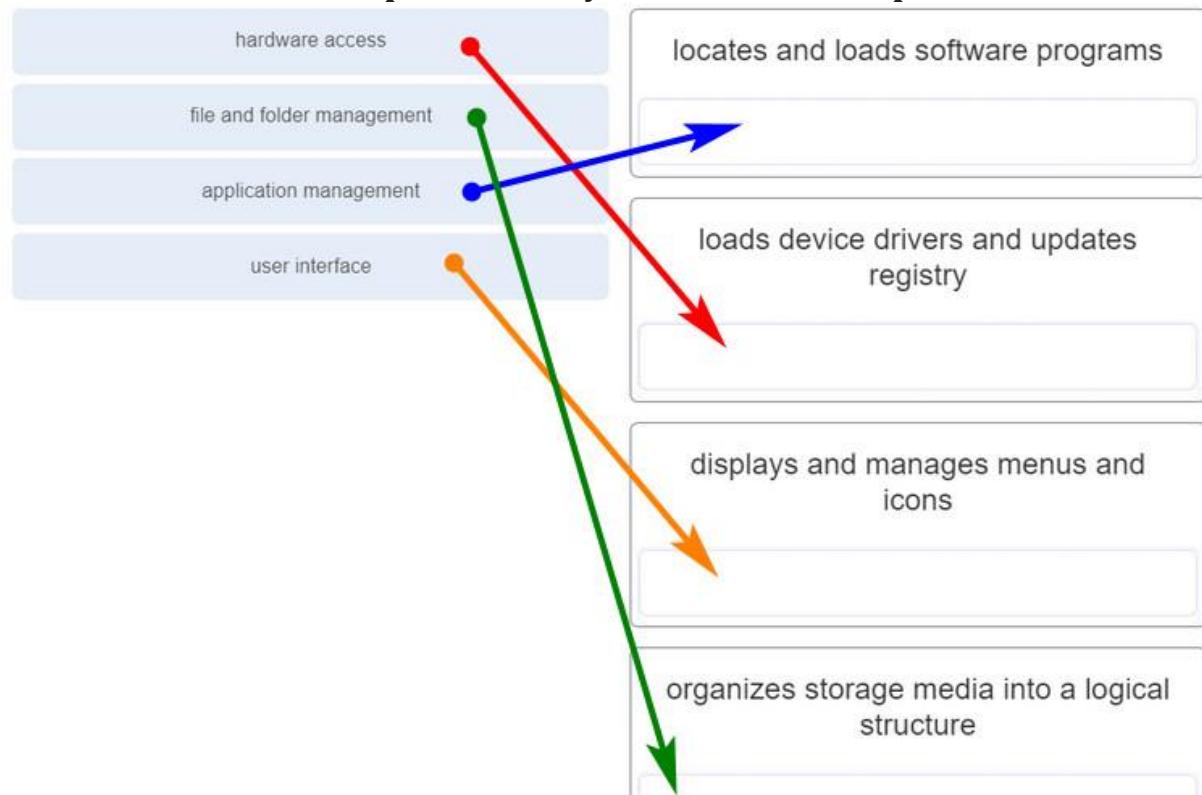
- MBR takes over control of the boot process and starts BOOTMGR
- BOOTMGR reads the Boot Configuration Data file to know which OS to load and where to find the OS on the boot partition
- **BOOTMGR invokes WINLOAD.EXE in order to load the NTOSKRNL.EXE file and HAL.DLL**
- **BOOTMGR reads the registry files and loads device drivers**
- **NTOSKRNL.EXE starts the WINLOGON.EXE program and displays the Windows login screen**

At this point, the NT kernel takes over. The NT kernel is the heart of all Windows operating systems. The name of this file is NTOSKRNL.EXE. It starts the login file called WINLOGON.EXE and displays the Windows Welcome screen.

143. An analyst is booting a tablet that has Windows 7 installed with media card reader. The boot process is currently working on the following step: WINLOGON.EXE displays the Windows Welcome screen What is the next step that will happen in the boot process?

- **There are no more steps, the boot process is complete.**
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- The Windows kernel takes over the boot process.

144. Match the function performed by an OS to its description.



- hardware access — loads device drivers and updates

- file and folder management — organizes storage media into a logical structure
- application management — locates and loads software programs
- user interface — displays and manages menus and icons

145. Before installing the latest version of printer management software, an IT technician creates a restore point on the Windows 10 computer. The installation fails before it is complete, and now the printer shows as unavailable. Which Windows option should the technician use to reverse the software installation and return the system to its prior state without affecting users files and settings?

- Backup and Restore
- **System Restore**
- File History
- Registry editor

146. A new customer asks if all of its older company computers, which are still running Windows XP, can be immediately upgraded to Windows 10. What are two important concerns that the IT technician must discuss with the customer in order to determine if the OS upgrade can be done? (Choose two.)

- the availability of wireless 802.11 standards support in the new OS
- OS support for new printers and scanners they may purchase
- **compatibility of existing applications and custom software with the new OS**
- the timeframe for the end of support for Windows 10
- **minimum memory and processor requirements for Windows 10**

147. Which three wireless router settings should be disabled as a security best practice? (Choose three.)

- **UPnP support**
- **WPS auto configuration**
- **SSID broadcast**
- MAC address filtering
- parental controls
- 802.11i authentication

148. Match the Android or Apple element to its description.

Match the Android or Apple element to its description.



- walled garden model — prevents the spread of malware through Apple App Store
- proprietary SDK Xcode — used to create iOS third-party apps
- sideloading apps — term for directly installing an apk file into Android
- widgets — apps displaying dynamic information in Android
- application sandbox — area that isolates Android apps from interacting with each other
- rooting and jailbreaking — used on iOS to remove Apple user access restrictions

149. What are two symptoms that indicate that a computer system may be a victim of DNS spoofing? (Choose two.)

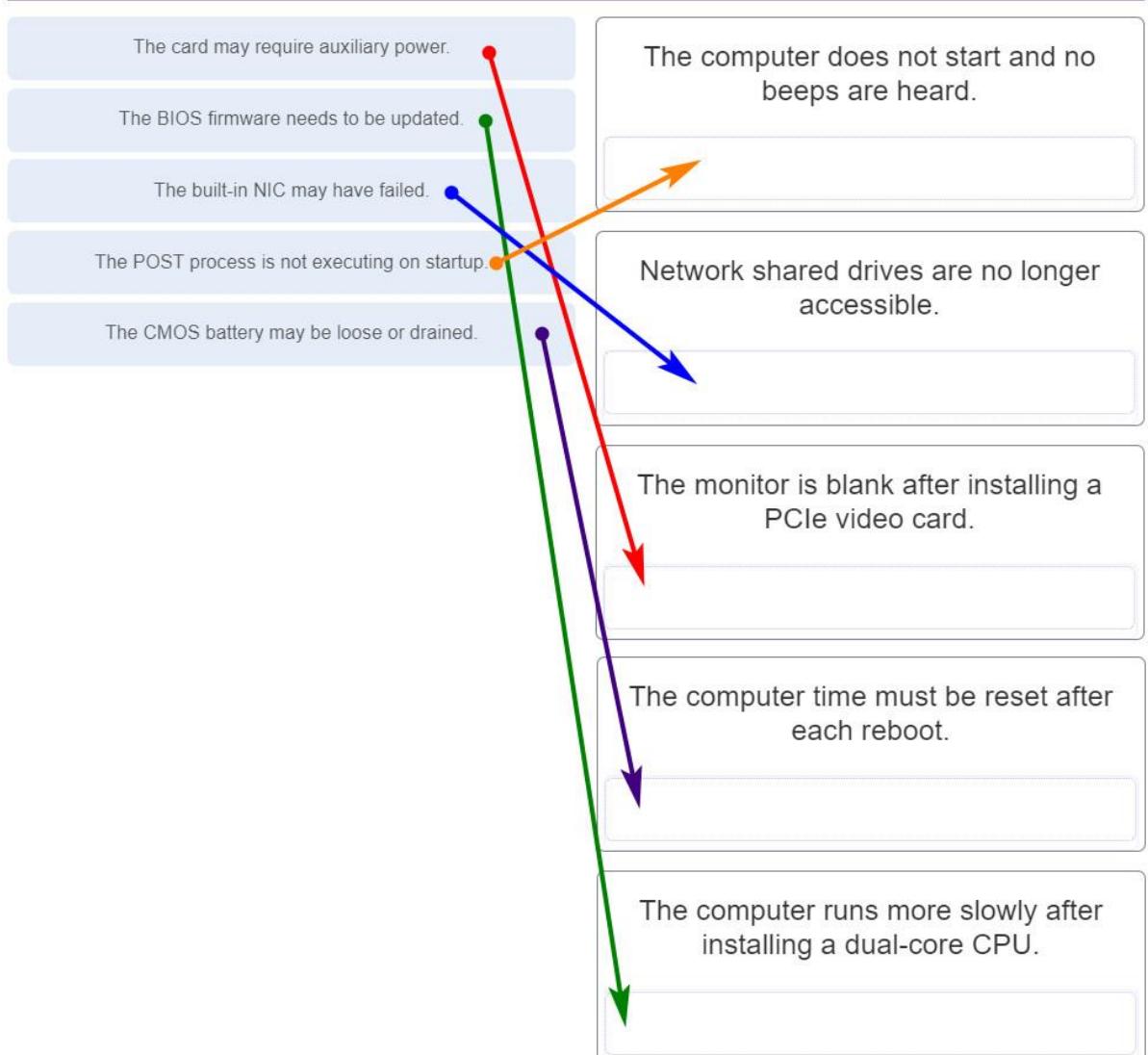
- The output of the nslookup command reports an unknown resolver name and IP address.
- Entering www.cisco.com in a browser displays a popular gaming site instead of the Cisco homepage.
- System files have been renamed and some user files are missing from the computer hard drive.
- The user receives Access Denied errors when attempting to download files from the network servers.
- A user is receiving thousands of junk emails each day and contacts report receiving spam from the user.

150. A PC technician has been asked by a supervisor to recommend a security solution for preventing tailgating. Which security technique should the technician recommend?

- Employ ping sweeps.
- **Use a mantrap.**
- Buy an ASA.
- Buy an IPS.

151. Match the computer or peripheral problem with a probable cause of the issue.

Match the computer or peripheral problem with a probable cause of the issue.



- The card may require auxiliary power. — The monitor is blank after installing a PCIe video card.
- The BIOS firmware needs to be updated. — The computer runs more slowly after installing a dual-core CPU.
- The built-in NIC may have failed. — Network shared drives are no longer accessible.
- The POST process is not executing on startup. — The computer does not start and no beeps are heard.
- The CMOS battery may be loose or drained. — The computer time must be reset after each reboot.

152. A company contracts with a service provider to obtain IaaS and ITaaS services. What are two advantages of these types of cloud service implementation? (Choose two.)

- increased control over the types of equipment purchased
- less internet bandwidth required for the LAN

- fewer switch ports needed to connect LAN users
- less investment in local equipment and training
- protection from costly upgrades and software licenses

Explanation: Cloud service providers have extended the IaaS model to also provide IT as a service (ITaaS). ITaaS can extend the capability of IT without requiring investment in new infrastructure, training new personnel, or licensing new software. These services are available on demand and delivered economically to any device anywhere in the world without compromising security or function.

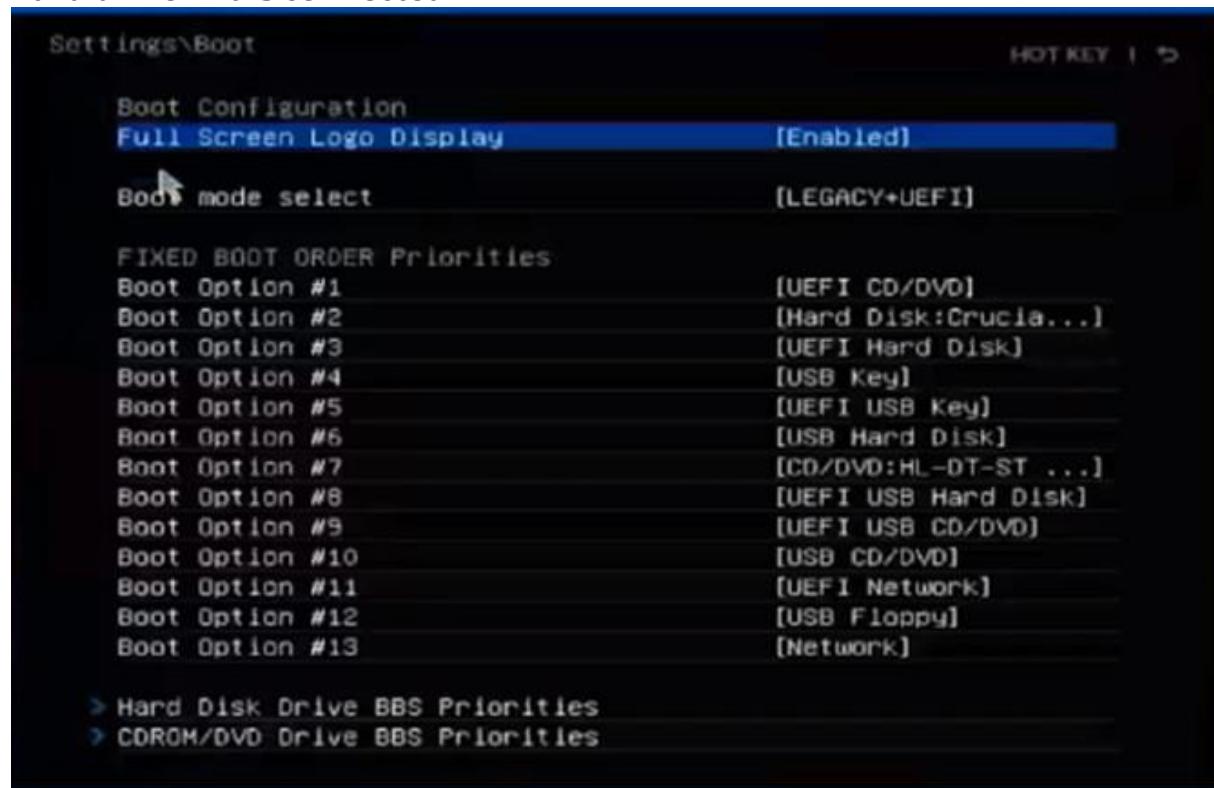
153. What are two methods of disabling cellular data when located in an area where it is limited or expensive? (Choose two.)

- turning on a personal hotspot
- enabling Bluetooth for data connections
- using a secure VPN connection
- placing the device in Airplane mode
- using Settings to turn off mobile data

Explanation: Mobile data can be turned off using the Settings options on both Android and Apple phones. Airplane mode turns off all cellular, WiFi, and Bluetooth capabilities. Once airplane mode has been turned on, Wi-Fi, Bluetooth, and other wireless functionality can be turned back on except for cellular.

154. Refer to the exhibit. A computer technician creates a bootable USB hard drive and loads a Linux operating system on it. When the technician reboots the computer, it does not boot to the Linux OS. Instead, the light on the optical drive flashes and then the computer loads Windows. What needs to be done to ensure that the computer automatically boots from the USB

hard drive if it is connected?



- Move the USB Key option to the top of boot order.
- Move the CD/DVD drive to the bottom of the boot order.
- Move both the CD/DVD and the hard disk options to the bottom of the boot order.
- **Move the USB Hard Disk drive option to the top of the boot order.**

155. A help desk technician receives a call from a user describing an issue with a computer. The user states that the computer will not power on, that it only makes a beeping sound. Why does the technician ask the user to restart the system and count how many beeps the computer makes?

- **Different numbers of beeps can indicate different types of hardware issues discovered during POST.**
- Fewer than 4 beeps usually indicate a problem with software loaded on the computer.
- The number of beeps indicates the severity of the hardware issue—more beeps mean a more severe problem.
- The number of beeps relates to beep codes that are standardized across all manufacturers.

156. A college uses Microsoft 365 Office and email services for its faculty, staff, and students. Data storage, custom applications, and Microsoft Active Directory services are delivered by virtual servers leased from a local data center. Single sign-on is implemented for both environments for authentication and authorization. Access control is managed locally. What type of cloud service implementation is the college using?

- hybrid cloud
- community cloud

- public cloud
- **private cloud**

157. The help desk receives a call from a customer who reports a computer issue that occurs after trying to install Windows 10 with a disc that the IT department provided. When the customer reboots the computer, instead of loading Windows, the computer displays the Windows installation program screen again. Which probable cause should the IT technician place at the top of the list of most obvious reasons for the error?

- The Windows 10 installation did not complete correctly.
- The boot order in the BIOS is incorrect.
- The hard drive in the computer is beginning to fail.
- **The customer forgot to remove the disc from the optical drive.**

158. Office workers in a software company are being temporarily relocated to a different area of the building while their previous office space is being reconfigured. Which type of network device should be installed to make it easy for the users to connect to the company network from all of their devices, including smart phones, tablets, and laptops?

- hub or repeater
- network switch
- **access point**
- modem

159. What is an example of an active cooling solution for a desktop PC?

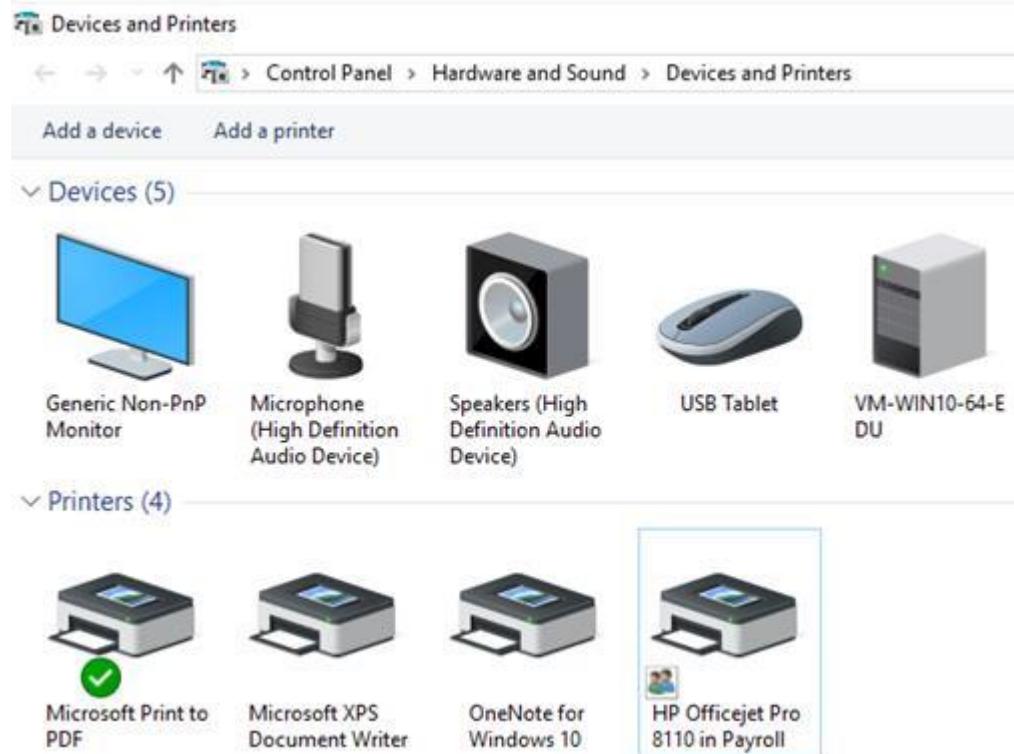
- reducing the speed at which the CPU operates
- applying thermal paste on top of the CPU
- adding a heat sink on top of the CPU
- **installing case and CPU cooling fans**

160. What is a consequence of a computer not having enough RAM memory installed?

- **Data may be swapped between the RAM and the slower hard drive more frequently.**
- Data and program code may be swapped between RAM and faster EEPROMs.
- USB flash memory can be used instead of RAM to improve performance.
- Programs and files can be held temporarily on ROM chips on the motherboard.

161. Refer to the exhibit. A payroll department employee has shared a locally attached HP Officejet Pro 8110 printer over the network in Windows 10. What do the other Windows 10 users in the payroll department have to

do in order to print to the shared printer?



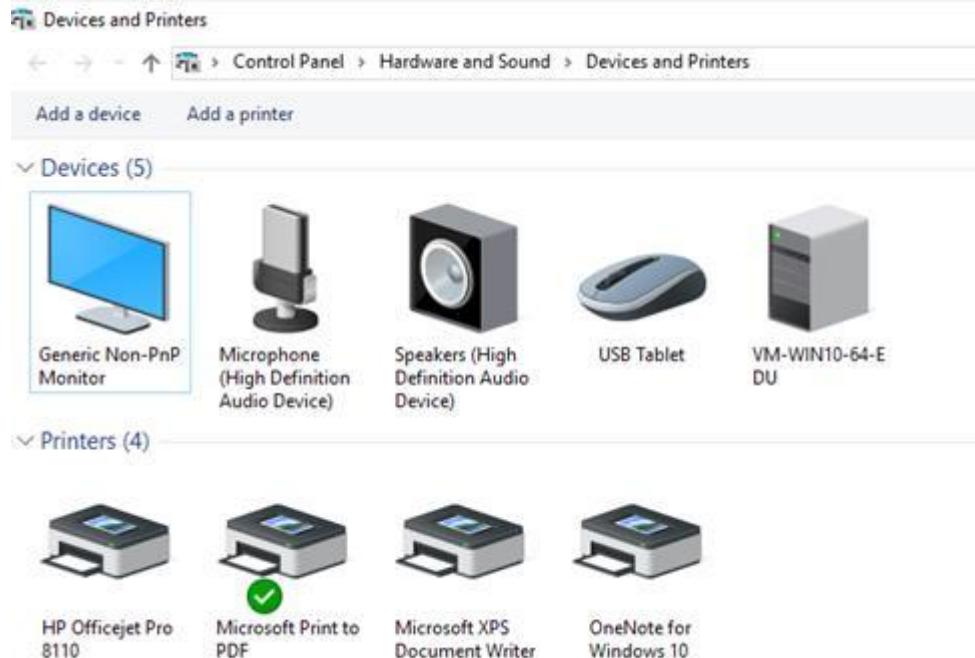
- Enable File and printer sharing in the Network and Sharing Center > Advanced sharing settings screen.
- Nothing. The shared printer will automatically appear in the Devices and Printers listing when someone logs in.
- Download and install the latest HP Officejet Pro 8110 driver for Windows 10 from the HP web site.
- **Use the Add a printer option and select the HP Officejet Pro 8110 in Payroll printer in the Select a printer screen.**

162. Which type of power supply is the most commonly used and provides a separate power connection in order to directly power the CPU?

- ATX
- AT
- EPS12V
- **ATX12V**

163. Refer to the exhibit. A user calls the help desk to report a printer issue. The user explains that when selecting the print option from the menu bar, a dialog box pops up requesting a file name. After entering the filename, nothing prints on the attached HP printer. What is the cause of the issue

that the user is experiencing?



- The HP printer is off-line or disconnected.
- The HP printer is not reachable over the network.
- **The default printer is a virtual printer.**
- An incorrect printer driver is loaded.

164. Which function is incorporated into some Intel CPUs that enables a single CPU to perform as though two CPUs are installed?

- overclocking
- HyperTransport
- **Hyper-Threading**
- 64-bit FSB

Explanation: Various CPU manufacturers complement their CPU with performance-enhancing features. For instance, Intel incorporates Hyper-Threading to enhance the performance of some of their CPUs. With Hyper-Threading, multiple pieces of code (threads) are executed simultaneously in the CPU. To an operating system, a single CPU with Hyper-Threading performs as though there are two CPUs when multiple threads are being processed. AMD processors use HyperTransport to enhance CPU performance. HyperTransport is a high-speed connection between the CPU and the Northbridge chip.

165. Which cloud computing characteristic enables multiple tenants to share the same storage, processing, and network bandwidth?

- on-demand provisioning
- client-side emulation
- broad network access
- **resource pooling**

Explanation: Resource pooling, the provider's computing resources are pooled to serve multiple consumers using a multi-tenant model. Each model,

each tenant (i.e., customer) shares the different physical and virtual resources dynamically assigned and reassigned according to consumer demand. Examples of resources that can be pooled and shared include storage, processing, memory, and network bandwidth.

166. Which three types of external ports can be used to connect an external storage device to a computer? (Choose three.)

- Thunderbolt
- USB
- eSATA
- SATA
- DVI
- HDMI

167. Which three computer components require separate cabling for power? (Choose three.)

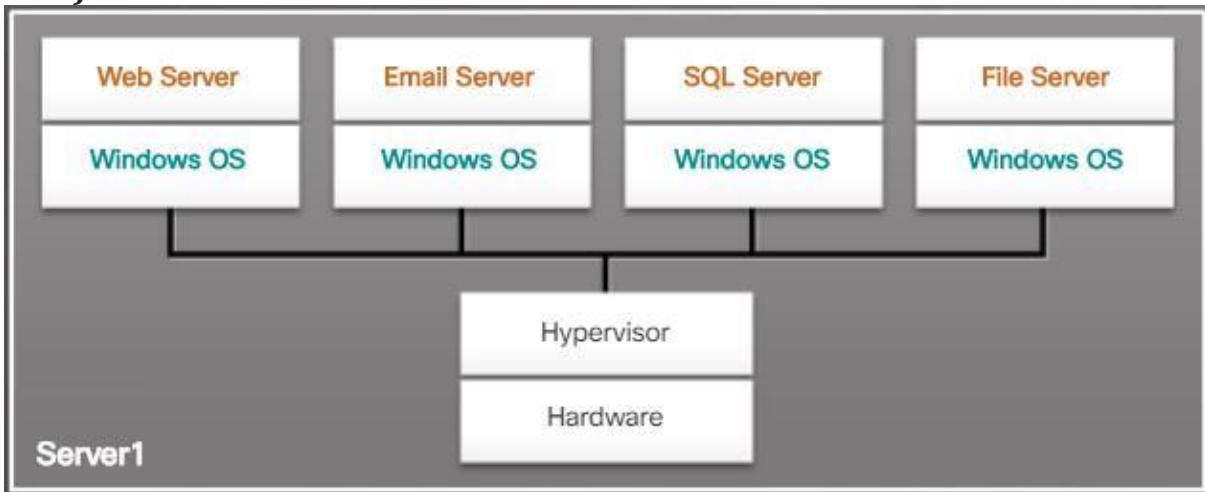
- video graphics cards
- USB flash drives
- internal SATA hard drives
- case and CPU fans
- PS2 or USB keyboards
- wireless network adapters

168. In which two situations would thin clients be a good choice to meet the end-user computing needs? (Choose two.)

- when it is necessary for employees to store large amounts of information for off-line access
- in branch offices located in rural areas where broadband Internet is either not available or not reliable
- when it is necessary for employees to use tablets with minimal storage and processing capabilities
- when installed in an enterprise environment where there is a gigabit LAN and powerful servers
- in a small business where employees must install and maintain their own application software

169. Refer to the exhibit. Which two hypervisor software products are suitable for the virtualization environment shown in the exhibit? (Choose

two.)



- Oracle VirtualBox
- Virtual PC
- VMware Workstation
- **VMware vSphere**
- **Oracle VM Server**

170. Refer to the exhibit. The help desk is receiving numerous calls from employees in the payroll department. It appears that their computers can print to the local network printer, but cannot access the cloud-based payroll service. One employee sends a screen print showing the result of issuing an `ipconfig /all` command. What is the cause of the issue being experienced by the users?

```
C:\Users\ITE>ipconfig /all

Windows IP Configuration

  Host Name . . . . . : VM-Win10-64-EDU
  Primary Dns Suffix . . . . . :
  Node Type . . . . . : Hybrid
  IP Routing Enabled. . . . . : No
  WINS Proxy Enabled. . . . . : No
  DNS Suffix Search List. . . . . : example.org

  Ethernet adapter Ethernet:

    Connection-specific DNS Suffix . . . . . : example.org
    Description . . . . . : Intel(R) PRO/1000 MT Desktop Adapter
    Physical Address. . . . . : 08-00-27-4C-0B-82
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . . : Yes
    IPv4 Address. . . . . : 192.168.0.20(Preferred)
    Subnet Mask . . . . . : 255.255.255.0
    Lease Obtained. . . . . : Monday, June 1, 2020 1:21:34 PM
    Lease Expires . . . . . : Monday, June 1, 2020 1:29:39 PM
    Default Gateway . . . . . : 192.168.100.1
    DHCP Server . . . . . : 192.168.0.1
    DNS Servers . . . . . : 10.0.2.1
    NetBIOS over Tcpip. . . . . : Enabled
```

- **The DHCP server is configured with the wrong default gateway address.**
- The DHCP server is down or unreachable over the network.
- No DNS server is configured for this network.
- The static IP configuration on the payroll department PCs is incorrect.
- The PCs are using IPv6 as the preferred communication protocol.

171. An employee recently purchased a smartwatch. Following the instructions from the watch manufacturer, the employee downloads the wearable app and installs it on an Android phone. The smartwatch shows that it is in discoverable mode, but the app cannot connect to the watch. What is one issue that might cause this problem?

- 5G is not active on the Android phone.
- NFC communications is not enabled on the smartwatch.
- The new smartwatch WiFi connection is faulty.
- **Bluetooth is disabled on the Android phone.**

172. Which member of the DDR SDRAM family has the fastest clock rate and consumes the least amount of power?

- GDDR5 SDRAM
- DDR3 SDRAM
- **DDR4 SDRAM**
- DDR2 SDRAM

173. Refer to the exhibit. What is one function that a technician can accomplish using this graphical interface?



- configure a wireless SSID and password
- **set passwords to allow for access to the BIOS**

- change screen resolution and lock screen settings
- change the amount of power provided to USB ports

174. A network technician suspects that there may be a short or a termination error in the wiring that connects an Ethernet switch to the network. Which tool would be the best choice for the technician to use to identify the issue?

- loopback adapter
- tone generator and probe
- **cable tester**
- multimeter

175. A client packet is received by a server. The packet has a destination port number of 110. What service application is the client requesting?

- HTTP
- **POP3**
- NetBIOS (NetBT)
- SMB/CIFS

176. Why would a university student need to use the taskkill command?

- to display a list of current processes running on a local or a remote computer
- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system
- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- **to end one or more processes on a PC based on process ID or image name**

177. Which term describes a partition scheme that supports storing a backup of a partition table?

- basic disk
- **GPT**
- logical drive
- dynamic disk

178. How can a hard drive that is using an MBR be partitioned in order to support additional logical drives?

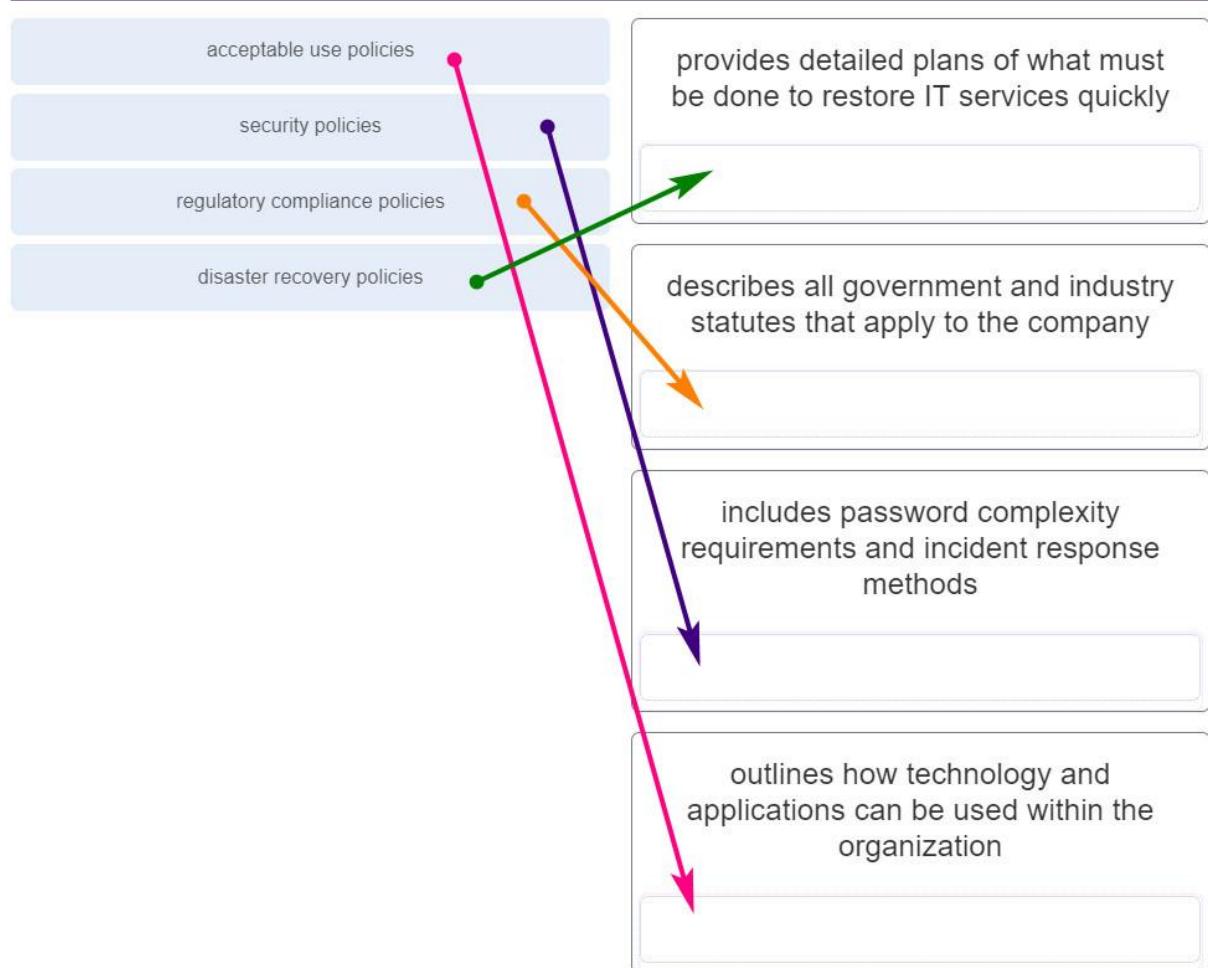
- Expand the size of the active partition into unallocated space available on the drive.
- **Make one primary partition an extended partition to contain the logical drives.**
- Create multiple logical partitions within the active partition.
- Create a large dynamic volume that spans more than one disk.

179. A computer technician uses Windows tools to gather information such as system components, operating system, users, and disk drives on multiple systems within the company. Another technician suggests that the tasks would take less time if they were automated. Which two built-in scripting capabilities in Windows enable a technician to run a simple text file, created in Notepad, which contains the necessary commands and variables? (Choose two.)

- **PowerShell ISE script interpreter**
- **command line batch script interpreter**
- Linux Bash shell script interpreter
- JavaScript client-side scripting language
- C++ and C# built-in compiler

180. Match the IT policy type with its description.

Match the IT policy type with its description.



- acceptable use policies — outlines how technology and applications can be used within the organization
- security policies — includes password complexity requirements and incident response methods
- regulatory compliance policies — describes all government and industry statutes that apply to the company
- disaster recovery policies — provides detailed plans of what must be done to restore IT services quickly

181. Refer to the exhibit. Examine both the output and the source code of the Linux shell script sample.sh. Which two statements describe the

variables contained in the sample.sh script? (Choose two.)

ite@VM-Ubuntu17: ~

A vertical column of five small icons representing common Linux desktop applications: a terminal window, a file browser, a web browser (Firefox), a file manager, and a system settings or terminal icon.

```
ite@VM-Ubuntu17:~$ cat sample.sh
#!/bin/bash
echo -n "What is your first name? "
read uname
DAY=$(date | cut -c 1-10)
echo ""
echo Hello $uname
echo You are logged into $HOSTNAME
echo The path to your home directory is $HOME
echo Today is $DAY
ite@VM-Ubuntu17:~$
ite@VM-Ubuntu17:~$ ./sample.sh
What is your first name? John

Hello John
You are logged into VM-Ubuntu17
The path to your home directory is /home/ite
Today is Thu Jun 4
ite@VM-Ubuntu17:~$
```

- The \$HOSTNAME variable is defined within the script.
- **The \$uname variable is an input variable defined within the script.**
- The \$DAY variable is a standard environmental variable in Linux.
- The value of the \$HOME variable is the same for all logged in users.
- **The \$HOSTNAME variable is an environmental variable initialized by the system.**
- The \$uname variable contains the username of the logged in user.

182. Why would a lawyer need to use the tracert command?

Why would a manager need to use the tracert command?

- to verify activity on the PC by displaying all active TCP connections on the device
- to query the Domain Name System (DNS) to get domain names and mapping information
- to quickly verify connectivity by sending echo-request messages to the destination and receiving a series of echo-reply messages from that destination
- **to display a list of the near-side router interfaces between the source device and the destination device**

Explanation: tracert – The command traces the route that packets take from your computer to a destination host. At the command prompt, enter tracerhost. The first listing in the results is your default gateway. Each listing after that is the router that packets are traveling through to reach the destination. Tracert shows you where packets are stopping, indicating where the problem is occurring.

183. A network analyst is booting a laptop that has Windows 7 installed with cellular SIM slot. The boot process is currently working on the following step: The Windows kernel takes over the boot process. What is the next step that will happen in the boot process?

- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- **NTOSKRNL.EXE starts the login file called WINLOGON.EXE.**
- The Windows kernel takes over the boot process.
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.

Explanation: Boot Sequence for Windows:

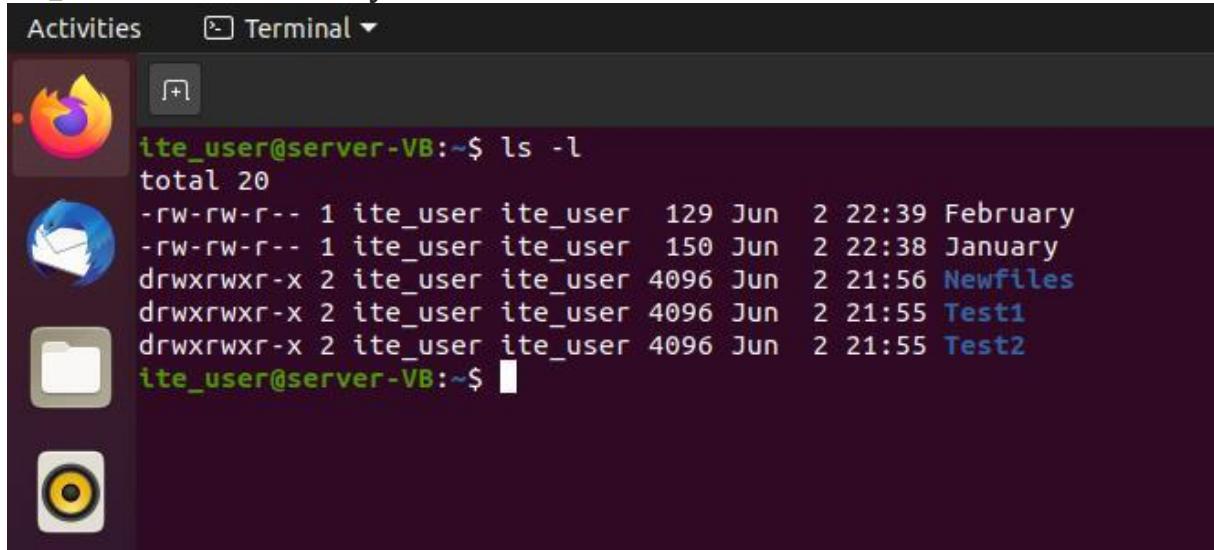
- Power on Self Test (POST)
- POST for each adapter card that has a BIOS
- BIOS reads the MBR
- MBR takes over control of the boot process and starts BOOTMGR
- BOOTMGR reads the Boot Configuration Data file to know which OS to load and where to find the OS on the boot partition
- **BOOTMGR invokes WINLOAD.EXE in order to load the NTOSKRNL.EXE file and HAL.DLL**
- **BOOTMGR reads the registry files and loads device drivers**
- **NTOSKRNL.EXE starts the WINLOGON.EXE program and displays the Windows login screen**

At this point, the NT kernel takes over. The NT kernel is the heart of all Windows operating systems. The name of this file is NTOSKRNL.EXE. It starts the login file called WINLOGON.EXE and displays the Windows Welcome screen.

184. A company purchases 15 USB flash drives to use for data analysis training for company accountants. The data analysis training requires that actual company data be stored on the drives, so a secure method of erasing the data is needed before the flash drives can be reused for other training classes. What method should the IT technicians use to ensure that the data on the USB flash drives cannot be recovered?

- a quick formatting utility to overwrite the data
- a degaussing wand to erase the data
- **a secure erase software utility to wipe the drive**
- an electromagnetic device to wipe the drive

185. Refer to the exhibit. What can be determined about the contents of the ite_user home directory?



```
ite_user@server-VB:~$ ls -l
total 20
-rw-rw-r-- 1 ite_user ite_user 129 Jun  2 22:39 February
-rw-rw-r-- 1 ite_user ite_user 150 Jun  2 22:38 January
drwxrwxr-x 2 ite_user ite_user 4096 Jun  2 21:56 Newfiles
drwxrwxr-x 2 ite_user ite_user 4096 Jun  2 21:55 Test1
drwxrwxr-x 2 ite_user ite_user 4096 Jun  2 21:55 Test2
ite_user@server-VB:~$
```

- The octal representation of the permissions for January is 755.
- All users have read, write, and execute permissions to files within the directories.
- **There are two data files and three directories contained in this user directory.**
- The data files in this user directory contain no data.

186. Refer to the exhibit. What is true of this mobile device screen?



- Tapping and holding the arrow at the bottom left will display the Home screen.
- **Text messages, news, photos and other content can be displayed in the different tiles.**
- Icons and buttons are used to represent the different apps on the phone.
- Unpinning an app from this view will uninstall the app from the phone.
- Tile sizes depend on the size of the app.

Explanation: The Windows Phone interface uses tiles to represent apps. Tiles are rectangular areas of a screen that identify the app and may also contain active content such as text messages, news feeds, and photos.

187. An on-site IT technician needs to work on systems installed in a small health clinic located in New York state. When the technician arrives, the office manager asks if the technician is aware of HIPAA regulations. Which two situations are breaches of PHI and could possibly lead to severe penalties under HIPAA? (Choose two.)

- sending the software support technician a text of the error messages that pop up when viewing patient records
- **sending screenshots of multiple patient health records that contain error messages to a second level technician**
- **making a backup of the clinic patient data in order to recreate the issues on a server in the IT support office**
- calling the software support help desk and describing an issue occurring when patient records are printed
- watching the office manager demonstrate an issue using a copy of the clinic database that contains test data

188. Why would a manager need to use the del command?

- to relocate a file from one Windows directory to another one
- to remove an empty directory
- to move that file to a different Windows directory while also leaving the file in the current location
- **to erase one or more files from a Windows directory**

189. A technician is working on a laptop and an app is not responding. What is a possible solution for this situation?

- Ensure that Bluetooth is not activated.
- **Perform a reset.**
- Ensure that Wi-Fi is turned off.
- Ensure that only one app is open at a time.

190. An end user wants to be able to recover an older version of a document that was created earlier in the day. Assuming that Windows Backup is enabled, which Windows 10 function can provide a user access to recover specific versions of a file?

- **File History**
- System Restore
- Windows Recovery
- Reset this PC

191. An IT technician attempts to copy a large file to a USB flash drive that contains other data but the copy fails. The technician checks the properties of the flash drive and finds that it was formatted using FAT32. Which method can the technician use to easily change the file system to NTFS without losing the data files currently stored on the disk?

- **Open the Command Prompt (Admin) window and use the convert command.**

- Back up the data on the flash drive, reformat the drive as NTFS, and restore the data.
- Use the Disk Management utility on Windows 10 to change the formatting.
- Create a new partition on the flash drive and format it as NTFS.

192. An employee wants to keep a local backup of iPhone data on a Windows laptop. What type of software does the employee need on the laptop to create this backup?

- Google sync
- Finder
- Time Machine
- **iTunes**

Explanation: Apple mobile devices can be backed up to a Windows PC or Laptop. iOS supports backups on iTunes running on a PC.

193. What can an IT technician accomplish using the Manage Storage Spaces feature in Windows 8 and 10?

- configure RAID controllers in the BIOS
- automatically configure disk backup utilities
- **create storage pools and configure disk arrays**
- update disk device drivers in the Windows registry

194. While troubleshooting an issue on a customer computer, an on-site technician believes that the problem can be resolved by using Windows Restore. What type of information is not restored when using Windows Restore with a recent restore point snapshot?

- device drivers
- operating system files
- registry entries
- **user data files**
- installed program settings

195. A technician is booting a PC that has Windows 10 installed on dynamic drives. The boot process is currently working on the following step: POST. What is the next step that will happen in the boot process?

- There are no more steps, the boot process is complete.
- NTOSKRNL.EXE starts the login file called WINLOGON.EXE.
- WINLOGON.EXE displays the Windows Welcome screen
- **BIOS locates and reads the configuration settings that are stored in the CMOS memory.**

Explanation: Boot Sequence for Windows:

- Power on Self Test (POST)
- POST for each adapter card that has a BIOS
- BIOS reads the MBR
- MBR takes over control of the boot process and starts BOOTMGR
- BOOTMGR reads the Boot Configuration Data file to know which OS to load and where to find the OS on the boot partition
- BOOTMGR invokes WINLOAD.EXE in order to load the NTOSKRNL.EXE

file and HAL.DLL

- BOOTMGR reads the registry files and loads device drivers
- NTOSKRNL.EXE starts the WINLOGON.EXE program and displays the Windows login screen

At this point, the NT kernel takes over. The NT kernel is the heart of all Windows operating systems. The name of this file is NTOSKRNL.EXE. It starts the login file called WINLOGON.EXE and displays the Windows Welcome screen.

196. What are two features of multicore processors? (Choose two.)

- **Applications such as gaming and video editing benefit from having multicore processors available.**
- Each core in a multicore processor has its own independent connection to reserved RAM.
- Multiple single-core processors use less power and generate less heat than a multicore processor does.
- **Multicore processors can execute instructions more quickly than single-core processors can.**
- L2 and L3 cache is shared in all types of multicore processors in order to improve performance.

197. Which two statements describe characteristics of network addresses? (Choose two.)

- **A MAC address is also referred to as a physical address because it is permanently embedded on the NIC.**
- A statically assigned IP address will be valid on any network to which the device connects.
- DHCP is used to dynamically assign both MAC and IP addresses to devices connected to the network.
- **A valid public IPv4 or IPv6 address is needed in order for devices to communicate over the internet.**
- The MAC address of a device will change when that device moves from one Ethernet network to another.

Explanation: Knowing how network addressing works can speed configuration and troubleshooting tasks. MAC addresses are assigned by the NIC manufacturer and remain the same as long as the NIC is not replaced. MAC addresses are used to communicate between devices connected to the same local Ethernet network. Valid IPv4 and IPv6 addresses are necessary for communications to be routed over the internet. All IP addresses are valid only on a network that has the same network prefix bits and the same subnet mask.

198. An on-site technician is asked to check a laptop used by an executive who occasionally works from home. The technician observes that the image on the laptop screen flickers and appears dull, even though the same image displayed on another monitor attached to the laptop docking station is normal. What are two issues that could cause the symptoms the technician observed? (Choose two.)

- **The inverter may be failing.**

- The LCD cutoff switch is damaged.
- The laptop is overheating.
- The GPU has failed.
- **The backlight needs adjustment or is failing.**

199. A technician must replace a power supply. Which two features should the technician consider when selecting the replacement? (Choose two.)

- **physical size**
- output voltage less than 3V
- UPS support
- **wattage**
- support for eSATA

Explanation: When selecting a power supply, make sure the size of power supply is appropriate in that it fits within the case and that it provides the proper amount of wattage for the installed computer parts.

200. Why is unbuffered memory a better choice than buffered memory for gaming or general use computers?

- The additional control circuitry on the unbuffered RAM module speeds up memory reads.
- Buffered memory cannot support the larger quantities of RAM that are necessary for gaming computers.
- **The computer can read data directly from the unbuffered memory banks, making unbuffered memory faster than buffered memory.**
- The control chip built into the unbuffered RAM module assists the memory controller to manage large amounts of RAM.

201. A UTM appliance, such as a Cisco ASA 5506-X, includes the functionality of which two standalone devices? (Choose two.)

- DSL modem
- external Storage drive
- **stateful firewall**
- **IPS/IDS**
- 24-port LAN switch

202. An on-site IT technician is attempting to resolve an issue with application performance on a customer laptop. The technician backs up the customer data and then replaces the memory in the laptop with known good memory. It does not resolve the performance issue. What are the next two actions the technician should take? (Choose two.)

- Call the laptop manufacturer technical support line.
- Continue to test the next likely probable cause.
- **Document that the possible solution did not work.**
- **Reinstall the original memory sticks.**
- Escalate the issue to the next level support technician.

Explanation: Knowing what to do when a possible solution does not resolve the problem is part of a good troubleshooting strategy. If you implement a possible solution and it does not correct the problem, you should reverse the

action that you just took and document that the possible solution did not solve the issue. Once that is complete, move on to test another potential solution or escalate the issue to the next level.

203. A user wants VirtualBox to run automatically when Windows 10 starts up. Which action will enable VirtualBox to load and run on system startup?

- **Copy the shortcut for VirtualBox from its location to the startup folder.**
- Right click on the application in the Start menu and choose the startup option.
- Use msconfig to change the startup option from manual to automatic.
- Use the Startup tab in Task Manager to add VirtualBox to the list of programs.

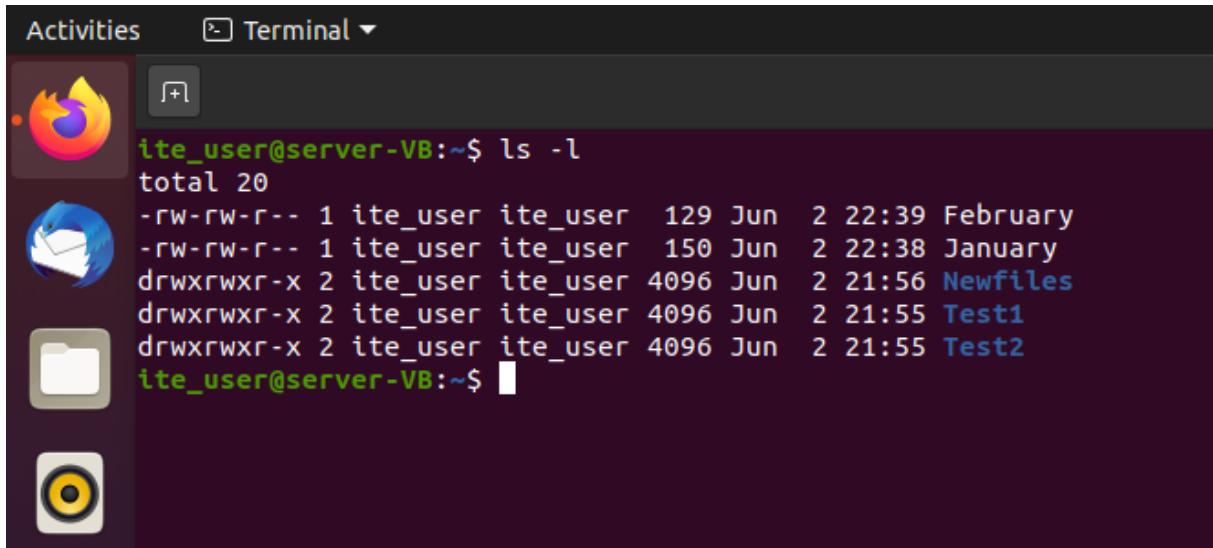
204. An on-site IT technician finished the removal of malware from a customer computer and installed new virus protection software. An hour after the technician left the site, the customer called the help desk to report that a critical web-based application was no longer functioning properly. Which step in the troubleshooting process did the IT technician fail to properly complete?

- Document findings and actions.
- Identify the problem.
- Establish a plan of action.
- Test the theory of probable cause.
- **Verify full system functionality.**

205. What are two characteristics of the hotend nozzle on a 3D printer? (Choose two.)

- **The hotend nozzle heats to different temperatures depending on the type of filament used.**
- Hotend nozzles are designed to last the life of the printer and do not need to be replaced.
- The heating temperature of the hotend nozzle is the same (190 degrees Celsius) for all materials.
- **Hotend nozzles are considered consumables and should be replaced during normal maintenance.**
- Replacing a hotend nozzle can be a complicated and time-consuming process.

206. Refer to the exhibit. What can be determined from the output of this command?



```
ite_user@server-VB:~$ ls -l
total 20
-rw-rw-r-- 1 ite_user ite_user 129 Jun  2 22:39 February
-rw-rw-r-- 1 ite_user ite_user 150 Jun  2 22:38 January
drwxrwxr-x 2 ite_user ite_user 4096 Jun  2 21:56 Newfiles
drwxrwxr-x 2 ite_user ite_user 4096 Jun  2 21:55 Test1
drwxrwxr-x 2 ite_user ite_user 4096 Jun  2 21:55 Test2
ite_user@server-VB:~$
```

What can be determined from the output of this command

- **The owner, group, and others have read permissions to January.**
- All users have read, write, and execute permissions to files within the directories.
- The data files in this directory contain no data.
- There are three data files and two directories contained in this directory.

207. Which type of disk drive can provide a very fast boot experience and also provide high capacity storage?

- SSD
- DVD
- HDD
- **SSHD**

Explanation: A solid-state hybrid drive (SSHD) is a compromise between a magnetic HDD and an SSD. It combines the best aspects of both technologies, being faster than an HDD but less expensive than an SSD. SSHDs integrate a magnetic HDD with onboard flash memory that serves as a nonvolatile cache. This allows SSHD drives to automatically cache frequently accessed data, speeding up certain operations such as operating system startup. Additionally, SSHD drives can provide more storage space than an SSD, making them an ideal choice for those seeking both speed and high capacity storage.

208. Refer to the exhibit. Which type of adapter card may require the width of two slots in order to accommodate additional cooling, even though it only

has one PCIe x16 connector?



- USB-C controller
- video capture card
- **graphics card**
- wireless network adapter

Explanation: PCIe x16 slots are generally intended for use with Graphics Cards. Capture devices usually use PCIe 1x slots

209. A technician follows the instruction manual that came with a new Bluetooth speaker to place the speaker in discoverable mode. In this mode, what type of information will the speaker transmit to the laptop in order to start the pairing process?

- **device name and Bluetooth capabilities**
- Bluetooth PIN and device ID
- protocol and radio frequency settings
- username and telephone number

Explanation: When a Bluetooth device is in discoverable mode, it transmits Bluetooth and device information such as device name, services that the device can use, and Bluetooth class. To prevent a Bluetooth device from being discovered unintentionally, only turn on Bluetooth capabilities when they are needed.

210. A technician is booting a PC that has Windows 10 installed on dynamic drives. The boot process is currently working on the following step: BIOS

locates and reads the configuration settings that are stored in the CMOS memory. What is the next step that will happen in the boot process?

- The code in the boot sector is executed and the control of the boot process is given to Windows Boot Manager.
- **The BIOS boots the computer using the first drive that contains a valid boot sector.**
- POST.
- BIOS locates and reads the configuration settings that are stored in the CMOS memory.

Explanation: After POST, the BIOS locates and reads the configuration settings that are stored in the CMOS memory. The boot device priority, the boot device priority is set in the BIOS and can be arranged in any order. The BIOS boots the computer using the first drive that contains an operating system.

211. A network analyst is booting a laptop that has Windows 7 installed with cellular SIM slot. The boot process is currently working on the following step: The Windows kernel takes over the boot process. What is the next step that will happen in the boot process?

- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- The Windows kernel takes over the boot process.
- **NTOSKRNL.EXE starts the login file called WINLOGON.EXE.**

Explanation: Boot Sequence for Windows:

- Power on Self Test (POST)
- POST for each adapter card that has a BIOS
- BIOS reads the MBR
- MBR takes over control of the boot process and starts BOOTMGR
- BOOTMGR reads the Boot Configuration Data file to know which OS to load and where to find the OS on the boot partition
- BOOTMGR invokes WINLOAD.EXE in order to load the NTOSKRNL.EXE file and HAL.DLL
- BOOTMGR reads the registry files and loads device drivers
- NTOSKRNL.EXE starts the WINLOGON.EXE program and displays the Windows login screen

At this point, the NT kernel takes over. The NT kernel is the heart of all Windows operating systems. The name of this file is NTOSKRNL.EXE. It starts the login file called WINLOGON.EXE and displays the Windows Welcome screen.

212. Why would a bank manager need to use the bootrec command?

- **to help to repair the MBR that is suspected of having issues**
- to manage a PCs drives, disks, partitions, volumes, and virtual drives
- to prepare a hard drive to accept Windows files

- to display the IPv6 address of the PC

213. A gamer is booting a tablet that has Windows 7 installed with 4 GB RAM. The boot process is currently working on the following step: The Windows kernel takes over the boot process. What is the next step that will happen in the boot process?

- WINLOGON.EXE displays the Windows Welcome screen
- The BIOS boots the computer using the first drive that contains a valid boot sector.
- There are no more steps, the boot process is complete.
- **NTOSKRNL.EXE starts the login file called WINLOGON.EXE.**

214. Why would a user need to use the gpresult command?

- to create a new Windows directory
- to make the PC synchronize with new group policy settings
- **to verify the settings that are suspected to be incorrect**
- to change from the current working folder to another folder

215. An accountant is booting a desktop that has Windows 8 installed. The boot process is currently working on the following step: WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL. What is the next step that will happen in the boot process?

- **WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.**
- Winload uses the path specified in BOOTMGR to find the boot partition.
- The code in the boot sector is executed and the control of the boot process is given to Windows Boot Manager.
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.

216. A user is booting a desktop that has Windows 10 installed that also uses an extended partition. The boot process is currently working on the following step: The code in the boot sector is executed and the control of the boot process is given to Windows Boot Manager. What is the next step that will happen in the boot process?

- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.
- The BIOS boots the computer using the first drive that contains a valid boot sector.
- The code in the boot sector is executed and the control of the boot process is given to Windows Boot Manager.
- **Winload uses the path specified in BOOTMGR to find the boot partition.**

217. A technician is working on a laptop and an app is not loading. What is a possible solution for this situation?

- **Perform a reset.**
- Ensure that only one app is open at a time.
- Check the display settings.
- Check the screen refresh rate.

218. Which term describes a file system that supports a partition size up to 2 TB?

- **FAT32**
- formatting
- dynamic disk
- basic disk

Explanation: File Allocation Table, 32 bit (FAT32) – Supports partition sizes up to 2 TB or 2,048 GB. The FAT32 file system is used by Windows XP and earlier OS versions.

219. Why would a technician need to use the copy command?

- **to copy files, directories, and subdirectories from one location to another**
- to move that file to a different Windows directory while also leaving the file in the current location
- to copy a group of files from one Windows directory to another
- to relocate a file from one Windows directory to another one

220. Match the Windows 10 boot sequence after the boot manager (bootmgr.exe) loads.

The Windows boot loader Winload.exe loads.

Ntoskrnl.exe and hal.dll are loaded.

Winload.exe reads the Registry, chooses a hardware profile, and loads the device drivers.

Ntoskrnl.exe takes over the process.

Winlogon.exe is loaded and executes the logon process.

Step one



The Windows boot loader Winload.exe loads.

Step two



Ntoskrnl.exe and hal.dll are loaded.

Step three



Winload.exe reads the Registry, chooses a hardware profile, and loads the device drivers.

Step four



Ntoskrnl.exe takes over the process.

Step five



Winlogon.exe is loaded and executes the logon process.

221. Match the correct API with its function within the Windows 10 environment.

Windows APIs	This is a cross-platform standard specification for multimedia graphics.
DirectX	Open Graphics Library (OpenGL)
Open Graphics Library (OpenGL)	This is a collection of APIs related to multimedia tasks for Microsoft Windows.
Java APIs	DirectX

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Windows APIs	This allows applications from older versions of Windows to operate on newer versions.
Java APIs	This is a collection of APIs related to the development of Java programming.

222. Which two tools are available to transfer user data and settings from an old Windows computer to a Windows operating system on a new computer? (Choose two.)

- **Windows Easy Transfer**
- Windows User Manager
- Windows Upgrade Assistant
- Windows Upgrade Advisor
- **User State Migration tool**

Explanation: When a new operating system is being installed, existing user data and settings need to be migrated from the old to the new operating system. The User State Migration Tool and the Windows Easy Transfer Tool are available to perform this task on the Windows Vista, 7, and 8 operating systems.

223. A user wants to extend a primary partition formatted with the NTFS file system with the unallocated space on the hard disk. What must the user do after the primary partition is extended to make it usable?

- **Convert the disk type to dynamic.**
- Ensure that the disk type is basic.
- Format the disk with the FAT64 file system.
- Partition the new space as a basic disk.

Explanation: A partition must be formatted with the NTFS file system in order to extend it by using the unallocated space on the disk. Once the partition has been extended, the disk type must be converted to a dynamic disk in order for the new partition to be accessible.

224. Why is a full format more beneficial than a quick format when preparing for a clean OS installation?

- A full format is the only method of installing Windows 8.1 on a PC that has an operating system currently installed.
- **A full format will delete files from the disk while analyzing the disk drive for errors.**
- A full format will delete every partition on the hard drive.
- A full format uses the faster FAT32 file system, whereas a quick format uses the slower NTFS file system.

Explanation: A full format removes files from a partition while scanning the disk for bad sectors. A quick format will remove files from a partition but does not scan a disk for bad sectors.

225. A technician wishes to prepare the computers in the network for disaster recovery. The network consists of a variety of desktops and laptops from different vendors. All the computers are running either a 32-bit version of Windows 10 Pro or a 64-bit version of Windows 10 Pro. How would the technician prepare the recovery media?

- Prepare one 64-bit recovery disc for all the computers.
- Prepare one 32-bit recovery disc for all the computers.
- **Prepare individual recovery discs for all the computers.**
- Prepare one image restore for all the computers.

Explanation: All the PCs are from different vendors and thus have dissimilar hardware configurations. Furthermore, all the PCs have a variety of 32-bit Windows 10 and 64-bit Windows 10. Because the PCs have different versions of the OS and dissimilar hardware, you cannot use the same image on all the PCs. In order to use a single image, Sysprep must be used to strip out machine specific information like the SID, and all PCs must have the same hardware configuration and the same version of the Windows operating system.

226. A technician wishes to deploy Windows 10 Pro to multiple PCs through the remote network installation process. The technician begins by connecting the new PCs to the network and booting them up. However, the deployment fails because the target PCs are unable to communicate with the deployment server. What is the possible cause?

- The wrong network drivers are loaded in the image file.
- The SID has not been changed in the image file.

- **The NIC cards on the new PCs are not PXE-enabled.**
- Sysprep was not used before building the image file.

Explanation: The NIC cards on the new PCs have to be PXE-enabled in order for them to communicate with the remote installation services on the server.

227. Which condition is required when planning to install Windows on a GPT disk?

- **The computer must be UEFI-based.**
- Only one primary partition can contain an OS.
- The maximum partition size cannot exceed 2 TB.
- The maximum number of primary partitions that can co-exist is 4.

Explanation: The globally unique identifier (GUID) partition table (GPT) makes use of a number of modern techniques to expand on the older MBR partitioning scheme. GPT is commonly used in computers with UEFI firmware. For Windows 10 to be installed on, and boot, from a GPT disk UEFI must be used.

228. A technician wishes to perform a customized unattended network installation of Windows 10 on a PC. The requirements include the installation of specific applications and device drivers through the use of an answer file. What would the technician use to create the answer file?

- Recovery partition
- **Windows SIM**
- disk cloning
- System Restore

Explanation: To perform a custom Windows Unattended installation, setup.exe must be run with the user options found in the answer file. Additional packages, such as applications or drivers, can be added to the answer file. The Windows System Image Manager (SIM) is used to create the setup answer file.

229. An organization has purchased a custom application for the sales staff that can only be installed on a 64-bit Windows operating system. Each member of the sales staff has a Windows 8.1 32-bit PC. What must the IT department do in order to install and run the application on the sales staff computers?

- Downgrade the 32-bit Windows 8.1 to 64-bit Windows 7.
- Upgrade the 32-bit Windows 8.1 to 64-bit Windows 10.
- **Perform a clean installation of 64-bit Windows 10.**
- Download and install 64-bit hardware drivers in the current OS.

Explanation: A 32-bit OS cannot be upgraded to a 64-bit OS. In this case a clean install of Windows 64-bit would be the only option because the application requires a 64-bit Windows environment to work.

**230. Match the tabs of the Windows 10 Task Manager to their functions.
(Not all options are used.)**

Performance	Allows for a process to have its affinity set.
Startup	
Services	
Users	Displays resource utilization information for CPU, memory, network, disk, and others
Details	
	Allows programs that are running on system startup to be disabled.
	Allows for a start, stop or restart of a particular service.

231. Match the drive status indicators in the Disk Management utility with their description. (Not all options are used.)

Offline	a volume that is functioning properly
Healthy	Healthy
Initializing	a basic disk that is being converted into a dynamic disk
Missing	Initializing
Not Initialized	a disk that does not contain a valid signature
Online	Not Initialized
	a basic or dynamic disk that is accessible and shows no problems
	Online
	a dynamic disk that is corrupted or unavailable
	Offline



232. Match the wireless security settings to the description. (Not all options are used.)

Open	The Advanced Encryption Standard (AES) cipher and preshared keys (PSKs) are used to encrypt communications.
WEP	
WPA2-Personal	
WPA2-Enterprise	

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WPA2-Personal
Authentication is passed from the access point to a centralized authentication RADIUS server.

WPA2-Enterprise
Data is sent unencrypted with no authentication.

Open

233. What are two possible solutions to any Windows computer restarting continuously and never displaying the desktop? (Choose two.)

- Upgrade the processor.
- **Press F8 to open the Advanced Options menu and choose Disable Automatic Restart on System Failure.**
- Access the BIOS and change the boot order options.
- **Run chkdsk /F /R from the recovery console.**
- Upgrade the video card.
- Reset the hard drive jumpers.

Explanation: Upgrading the processor, upgrading the video card, or resetting the hard drive jumper would not fix this problem. Boot order settings cannot cause the system to reboot continuously.

234. A technician uses Microsoft Deployment Image Servicing and Management (DISM) tool to create a Windows image file on one of the workstations running Windows 10. When the technician tries to clone another workstation with the image file, the workstation exhibits network connectivity issues on completion. What could cause this?

- **The SID of the original PC is not cleared when creating the image with DISM.**
- The technician used the wrong tool to create the image file.
- The network drivers were not added to the image file.

- The Sysprep utility should have been turned off prior to the creation of the image file.

Explanation: The technician must use Sysprep to clean up the local specific configuration, such as the SID, otherwise the cloned systems will not work properly.

235. A user complains that user files cannot be synced with the network file server while the user is traveling out of the office. The user had access to the internet but no access to the company network server. How can this be addressed?

- Ensure that the user only uses a single device and not multiple devices when accessing networked files.
- Turn off the activation of Offline Files feature in the Sync Center.
- Setup a Sync partnership with the networked file location.
- **Setup a Sync partnership between the network server, Microsoft OneDrive, and the user.**

Explanation: Because the user has access to the internet, access to the Microsoft OneDrive cloud based service is possible and thus the user can sync with Microsoft OneDrive, which in turn can sync with the company network server from across the internet.

236. A technician has connected a new internal hard drive to a Windows 10 PC. What must be done in order for Windows 10 to use the new hard drive?

- **Initialize the new hard drive.**
- Extend the partition on an existing hard drive to the new hard drive.
- Run chkdsk on the new hard drive.
- Mount the new hard drive.

Explanation: The new hard drive needs to be initialized before it can be used in Windows. This will involve formatting the disk which will erase any existing data on the drive.

237. What service does PRINT\$ provide?

- It provides a network share for accessing shared printers.
- **It provides printer drivers for printer administrators.**
- It provides a group of hidden printers that only administrative users have permissions to send print jobs to.
- It provides an administrative Printer share accessible by all local user accounts.

Explanation: PRINT\$ is a hidden share for printer drivers. It is shared by default and used to access remote shared printers or provide drivers to clients when sharing a printer.

238. A technician is troubleshooting a Windows 10 laptop infected with a virus that has damaged the master boot record. The technician has booted the laptop using the installation media and is attempting to repair the laptop from the command line interface. Which command can the technician use to repair the corrupt master boot record?

- **bootrec /fixmbr**

- chkdsk
- msconfig
- sfc /scannow

Explanation: The sfc /scannow command is used to check the integrity of the system files. The msconfig command allows for viewing the startup configuration mode, while the chkdsk command is used to repair the Windows file system. The bootrec /fixmbr command is used to repair a corrupt master boot record in a Windows 10 environment.

239. A user reports that a Windows 10 PC displays the error message “Invalid Boot Disk” during the boot process. The IT technician attempts to boot the computer and finds that the error message occurs immediately after the POST. What could be the possible cause?

- A recently installed device driver is incompatible with the boot controller.
- BOOTMGR is corrupted.
- **The MBR/GPT is corrupted.**
- A service failed to start during the booting process.

Explanation: The message “invalid Boot Disk” could be a symptom of a missing or damaged MBR/GPT, a missing or damaged Boot Configuration Data file, a boot sector virus, a boot order not set correctly in BIOS, media without an operating system being in a drive, a hard drive not detected or damaged, or the absence of an installed operating system.

240. Which port number is used by Virtual Network Computing (VNC) to provide remote screen sharing between devices?

- 22
- 23
- 389
- 3389
- **5900**

Explanation: Virtual Network Computing (VNC) is a freeware product that is similar in functionality to RDP and works over port 5900.

241. Which feature is included with macOS and provides the ability for a remote user to view and change files, folders, and applications on the local computer?

- **Screen Sharing**
- Remote Assistance
- Virtual Network Computing
- Remote Desktop

Explanation: In macOS, remote access functionality is provided by the Screen Sharing feature, which is based on Virtual Network Computing (VNC). VNC is a freeware product that is similar in functionality to RDP and works over port 5900.

242. Which area of concern falls under the operations and planning category in IT documentation?

- **inventory management**
- disaster recovery policies and procedures
- logical and physical network topology diagrams
- end-user manual for hardware and software

Explanation: There are four broad categories of IT documentation: Policies, Operations, Projects, and User documentation. Operations is concerned with inventory management.

243. Match the individual languages with their corresponding classification.

C++	Scripting Languages
VBScript	VBScript
Java	Python
C#	JavaScript
Python	
JavaScript	
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Compiled Languages	
C++	
Java	
C#	

Explanation: Scripting languages include Windows batch files, PowerShell, Linux shell script, VBScript, JavaScript, and Python. Compiled languages include C, C++, C#, and Java.

244. Which two actions should a technician take if illegal content, such as child pornography, is discovered on the hard drive of a customer computer? (Choose two.)

- Confront the customer immediately.
- Remove and destroy the hard drive.
- **Contact a first responder.**
- Shut down the computer until authorities arrive.
- **Document as much information as possible.**

Explanation: If illegal content is found, begin documentation to build a chain of custody and contact a first responder immediately.

245. What are three pieces of information a level one technician should gather from a customer? (Choose three.)

- **contact information**
- **description of the problem**
- **details of any recent changes to the computer**
- output from diagnostic software
- output from a remote connection to the customer computer
- current CMOS settings

Explanation: A level one technician should gather information from the customer and solve simple problems. For more advanced diagnostics, opening the computer case, running diagnostics software, and performing remote connections, the problem should be escalated to a level two technician.

246. What two actions are appropriate for a support desk technician to take when assisting customers? (Choose two.)

- Interrupt customers if they start to solve their own problems.
- Comfort a customer by minimizing the customer problem.
- **Let a customer finish talking before asking additional questions.**
- **If you have to put the customer on hold, ask the customer for permission.**
- As soon as you detect customer anger, pass the angry customer to the next level.

Explanation: When dealing with customers, a technician should show professionalism in all aspects. A technician should observe the process before putting a customer on hold. First, let the customer finish speaking. Then, explain that there is need to put the customer on hold for a short period, and ask the customer for permission to do so. Tell the customer that it will be only a few minutes and explain what you will do during the period. When the customer agrees to be put on hold, thank the customer.

247. A support desk technician is dealing with an angry customer. Which two approaches should the technician take in dealing with the customer? (Choose two.)

- Ask socially related questions to direct the customer away from the problem.
- **Work to redirect the conversation to solving the problem.**
- Immediately transfer the customer to a higher level technician.
- Reply to the customer with the same level of anger.
- **Let the customer explain the problem without interrupting.**

Explanation: Angry customers should be allowed to explain the problem, then be redirected to discussing how the problem can be solved. Transferring the customer, replying in a rude tone, and asking unrelated questions will usually increase, not ease, the anger being expressed by the customer.

248. What two kinds of problems should be escalated from a level one technician to a level two technician? (Choose two.)

- problems that require rebooting the equipment
- problems that can be solved in a short time
- **problems that are complicated and will take a long time to resolve**
- problems that do not fit into the “down call” category
- **problems that are beyond the scope of the knowledge of the level one technician**

Explanation: A problem should be escalated to a level two technician when the problem is going to take a long time to fix, is affecting a large number of users, or requires knowledge or expertise that the level one technician does not possess.

249. An IT technician in a service company has provided extensive remote IT support with product deployment for a customer. After the completion of the contract, a complaint is filed against the IT technician for not following company policy by sending unsolicited emails about services and products that are not related to the contract. What two things should the IT support technician have done differently? (Choose two.)

- **The IT technician should have researched the company policy about personal communication with customers on company time.**
- The IT technician should have used encryption to hide the purpose of the emails.
- The IT technician should have added the customer to a chain letter with many recipients instead.
- **The IT technician should have asked the customer if the customer was interested in receiving information regarding other new services and products.**
- The IT technician should have requested permission from a supervisor to send the customer emails.

Explanation: While working with customers both briefly and over an extended period of time, it is possible to form friendly relationships. It is important to always follow company policy and never send unsolicited messages to a customer. Also do not send unsolicited mass mailings or chain letters to customers from a company email address. Any personal relationships should be kept via personal email accounts and should not reflect the IT organization of the employer.

250. A third-party security firm is performing a security audit of a company and recommends the company utilize the Remote Desktop Protocol. What are two characteristics of the Microsoft Remote Desktop Protocol (RDP)? (Choose two.)

- RDP connects on TCP port 22.
- RDP requires a Windows client.
- **RDP uses an encrypted session.**
- RDP is a command-line network virtual terminal protocol.

- RDP connects on TCP port 3389.

Explanation: The Remote Desktop protocol (RDP) is used to remotely access a Windows OS. It is a client/server protocol. The port number for RDP is TCP port 3389 and it uses encryption.

251. Which subject area describes collecting and analyzing data from computer systems, networks, and storage devices, as part of an investigation of alleged illegal activity?

- cyber law
- **computer forensics**
- cryptography
- disaster recovery

Explanation: The field of computer forensics involves collecting and analyzing data from computer systems, networks, wireless communications, and storage devices.

252. In a computer forensics investigation, which type of data is considered volatile data and can be lost if power is removed from the computer?

- data stored on magnetic disks
- data stored on an internal drive
- **data in transit between RAM and the CPU**
- data stored on an external drive

Explanation: Volatile data is a data that is lost when power is turned off, and is located in temporary storage such as RAM, cache, CPU or in transit between them.

253. Refer to the exhibit. During the troubleshooting of software that is installed on a computer system, a level one technician requires help from a level two technician. The file shown in the exhibit must be sent to the level two technician. How should the level one technician deliver this file?

```
<output ommited>
<server address='192.168.1.2' />
<server port='8752' />
<server protocol='tcp' />
<server protocol='utp' />

<user username="johndoe" password="s3cr3t" roles="administrator" />
<user username="janedoe" password="1P455w0d!" roles="user"/>
<user username="guest" password="G355_1t" roles="none"/>
<output ommited>
```

- This file should not be shared with the level two technician.
- **Replace all passwords in the file with <password omitted> before emailing the file and then supply the passwords by secure means, if required.**
- Send the file as it is to the level two technician.
- Deliver the file in printed format only.

Explanation: Customer privacy should be maintained. The easiest way to preserve it is removing any occurrence of passwords from the documentation that is being sent to another technician. If a client password is required to

solve the problem, it should be sent to another technician through a specific document.

254. What skill is essential for a level one technician to have?

- the ability to gather relevant information from the customer and pass it to the level two technician so it can be entered into the work order
- the ability to ask the customer relevant questions, and as soon as this information is included in the work order, escalate it to the level two technician
- **the ability to translate a description of a customer problem into a few succinct sentences and enter it into the work order**
- ability to take the work order prepared by the level two technician and try to resolve the problem

Explanation: The level one technician must be able to translate the description of a customer problem into a succinct sentence or two that is entered into the work order.

255. What is used to control illegal use of software and content?

- chain of custody
- service level agreement
- End User License Agreement
- **digital rights management**

Explanation: Digital rights management, or DRM, is software that is designed to prevent illegal access to digital content.

256. What determines the level of support that a call center technician will provide to an individual customer?

- **Support is based on the SLA for that customer.**
- All customers receive the same level of support by the call center.
- A level one technician will provide a higher level of support than a level two technician.
- An individual call center technician chooses the level of support based on the time available to assist the customer.

Explanation: A call center technician must provide the level of support that is outlined in the SLA for that individual customer.

257. A bench technician enters the server room and finds the backup server computer case open. The hard drives containing patient medical data are all physically disconnected from the motherboard and the SATA data cables are hanging outside the case. Which step should the technician immediately take?

- Reconnect the SATA data cables to ensure continued data backup.
- Disconnect the SATA power cables to prevent the loss of persistent data.
- Place the hard drives in an external enclosure and begin backing up the data before releasing the drives to first responders.
- **Locate an employee qualified to collect evidence.**
- Dust the server computer case for fingerprints.

Explanation: When a potential crime scene is found, a chain of custody must be observed and followed. The technician should immediately locate another employee who is qualified to collect evidence. Disconnecting or reconnecting the drives or attempting to move data may adversely affect the chain of custody.

258. What is the difference between a scripting language and a compiled language?

- Scripting languages need to be converted into executable code using a compiler, while compiled languages are interpreted as they are executed.
- Compiled languages are executed by the operating system, while scripting languages are executed by the CPU.
- **Scripting languages are interpreted and executed line by line when a script is run, while compiled languages need to be converted into executable code.**
- Compiled languages are executed by a command interpreter, while scripting languages are executed by the CPU.

Explanation: A scripting language is different than a compiled language because each line is interpreted and then executed when the script is run. Compiled languages need to be converted into executable code using a compiler. Another difference between the two types of languages is that compiled languages are executed by the CPU while scripting languages are executed by a command interpreter or by the operating system.

259. Which methods can be used to implement multifactor authentication?

- VPNs and VLANs
- IDS and IPS
- **passwords and fingerprints**
- tokens and hashes

Explanation: A cybersecurity specialist must be aware of the technologies available that support the CIA triad.

260. When responding to a call from a customer who is experiencing problems with a computer, the technician notices that a number of system files on the computer have been renamed. Which two possible solutions could the technician implement to resolve the problem? (Choose two.)

- **Use antivirus software to remove a virus.**
- **Restore the computer from a backup.**
- Change the folder and file permissions of the user.
- Reset the password of the user.
- Upgrade the file encryption protocol.

Explanation: Renamed system files are usually the result of a virus on the computer. Removing the virus and restoring the computer from a backup are the only two possible solutions in this case.

261. A technician suspects that a security issue is causing problems with a computer. What two actions could be performed to test theories of probable cause when troubleshooting the PC? (Choose two.)

- **Log in as a different user.**
- **Disconnect the computer from the network.**
- Search helpdesk repair logs for more information.
- Discuss solutions with the customer.
- Ask the customer open-ended questions about the problem.

Explanation: Several actions can be taken by a technician when security issues are suspected as the possible cause of a problem with a computer. Logging in as a different user or disconnecting the PC from the network to isolate the cause of the problem are two possible actions.

262. The CIO wants to secure data on company laptops by implementing file encryption. The technician determines the best method is to encrypt each hard drive using Windows BitLocker. Which two things are needed to implement this solution? (Choose two.)

- **at least two volumes**
- USB stick
- password management
- **TPM**
- EFS
- backup

Explanation: Windows provides a method to encrypt files, folders, or entire hard drives depending on need. However, certain BIOS settings and configurations are necessary to implement encryption on an entire hard disk.

263. What is an accurate description of asymmetric encryption technology?

- Asymmetric encryption is an encryption process that compares traffic on both ends to make sure the traffic has not been altered.
- It is an encryption process that uses identical keys on both ends to establish the VPN.
- It is an encryption protocol that is used to encrypt data as the data is sent over the VPN.
- **It is an encryption process that uses a public and private key pair to encrypt/decrypt data.**

264. Which type of security threat can be transferred through email and is used to gain sensitive information by recording the keystrokes of the email recipient?

- adware
- Trojan
- worm
- **virus**
- grayware

Explanation: Adware does not record keystrokes. A worm self-replicates across the network. A Trojan appears to be a legitimate program while

carrying malware, and grayware is a general term for software that may be malware.

265. A manager reports that unusual things are happening on a Windows computer. The technician determines that malware is the culprit. What can the technician do to remove stubborn malware?

- Ensure that the computer is connected to the wired network so that antimalware updates can be installed.
- **Enter Safe Mode and do a system restore.**
- Install adware protection.
- Train the user on identifying trusted and untrusted sources.

Explanation: Booting the computer in Safe Mode prevents most drivers from loading. Additional antimalware software can then be installed to remove or quarantine malware. Sometimes the storage drive must be wiped, the operating system reinstalled, and data restored from a backup.

266. An employee that has worked at the company for many years has started a home-based business selling crafts. While leaving an office meeting, a company supervisor notices the employee buying supplies for the personal crafting business of the employee. What section of the security policy should the supervisor review when determining how to handle this situation?

- **acceptable use policies**
- identification and authentication policies
- incident handling policies
- remote access policies

Explanation: The acceptable use policies section of a security policy commonly identifies network resources and usages that are acceptable to the organization. They might also state the ramifications that can occur if this security policy is violated.

267. What Windows utility should be used to configure password rules and account lockout policies on a system that is not part of a domain?

- Event Viewer security log
- **Local Security Policy tool**
- Active Directory Security tool
- Computer Management

Explanation: A technician must be aware of the technologies and measures that are used as countermeasures to protect the organization from threats and vulnerabilities. A Windows Domain Security Policy is used and applied when a user logs in to a computer that is on a corporate network. A Windows Local Security Policy is used for stand-alone computers to enforce security settings.

268. A customer brings in a computer that is asking for a password as soon as it powers on, even before the operating system boots. Which type of password is enabled?

- **BIOS**
- login

- multifactor
- network
- synchronous

Explanation: A BIOS password is configured by entering the BIOS Setup program. If unknown, it can be removed by placing a jumper over two motherboard pins. Some motherboards support BIOS password removal by removing the CMOS battery, but if this is done, all BIOS settings will be reset to the default values.

269. When attempting to improve system performance for Linux computers with a limited amount of memory, why is increasing the size of the swap file system not considered the best solution?

- A swap file system only supports the ex2 file system.
- A swap file system does not have a specific file system.
- A swap file system cannot be mounted on an MBR partition.
- **A swap file system uses hard disk space to store inactive RAM content.**

Explanation: The swap file system is used by Linux when it runs out of physical memory. When needed, the kernel moves inactive RAM content to the swap partition on the hard disk. Storing and retrieving content in the swap partition is much slower than RAM is, and therefore using the swap partition should not be considered the best solution to improving system performance.

270. What are three features of GPS on mobile devices? (Choose three.)

- phone number lookup
- **navigation**
- **specialized search results**
- **device tracking**
- remote wipe
- gas mileage calculations

Explanation: Navigation, specialized search results, and device tracking are features of GPS on mobile devices. Remote wipe may be a feature on some mobile devices, but is not related to GPS. Phone number lookup and gas mileage calculations are not GPS features.

271. Which three components are used to assign file and directory permissions in Linux systems? (Choose three.)

- root
- **group**
- **owner**
- **all users**
- super group
- admin group

Explanation: In Linux, file and directory permissions are assigned as follows:

- **Owner** – the owner user of the file or directory
- **Group** – the user group that has been assigned to the file or directory

- All users – all other users on the system

272. A user downloads a widget onto his Android phone but is puzzled to see that when the widget is touched an app is launched. What is a possible cause?

- The user has downloaded a virus.
- The widget is corrupt.
- The security settings of the Android OS have been compromised.
- **The widget is associated with the app and this is the normal behavior.**

Explanation: Widgets are programs that when installed associate with the application they were built for. This will cause the application to launch when the widget icon is touched on the touchscreen of the Android device.

273. What is the purpose of running mobile device apps in a sandbox?

- to enable the phone to run multiple operating systems
- **to prevent malicious programs from infecting the device**
- to enable separate app icons to be displayed on the home screen
- to bypass phone carrier restrictions that prevent access to unauthorized apps

Explanation: Mobile device apps are run in a sandbox that isolates them from other resources. Bypassing the phone carrier from preventing access to unauthorized apps is jailbreaking or rooting the device.

274. Which built-in tool is available on a Mac OS X machine to perform disk backups?

- Disk Utility
- Deja Dup
- Finder
- **Time Machine**

Explanation: Time Machine is an automatic backup utility in the Mac OS. The Mac Disk Utility allows an administrator to configure disk backups. The Deja Dup tool is a tool built into the Linux OS for backing up data. Finder is similar to the Windows File Explorer tool and is used to navigate the Mac OS file system.

275. A user calls the help desk reporting that a laptop with Linux freezes on startup and displays kernel panic. What could cause this problem?

- **A driver has become corrupted.**
- GRUB or LILO has been deleted.
- GRUB or LILO has been corrupted.
- An application is using a resource that has become unavailable.

Explanation: A corrupted driver or failing hardware could cause kernel panic for Linux or Mac OS. The laptop will not be able to boot successfully. Either GRUB or LILO corruption or GRUB or LILO deletion would cause the stop screen to display a “Missing GRUB” or “Missing LILO” message. A resource unavailable to an application will cause the application to stop responding, but not prevent a laptop from starting up.

276. A user calls the help desk to report that a mobile device exhibits very slow performance. What could cause this problem?

- The touchscreen is not calibrated.
- An app is not compatible with the device.
- The operating system is corrupt.
- **A power-intensive app is running in the background.**

Explanation: A power-intensive app that is running in the background could consume most of the CPU cycles and thus the device would exhibit very slow performance for other apps. If an app is not compatible with the device, the device operating system would freeze. If the operating system has encountered an error, the device will fail to respond.

277. Which term describes a partition that is used to store and boot an operating system by default?

- logical drive
- **active partition**
- basic disk
- extended partition

278. Which term describes a file system that supports a partition size up to 16 exabytes?

- extended partition
- **NTFS**
- logical drive
- active partition

279. Which term describes a file system for USB flash drives that supports files larger than 4 GB?

- extended partition
- **exFAT**
- logical drive
- active partition

280. Which term describes a partition that supports up to 23 logical drives?

- logical drive
- **extended partition**
- basic disk
- active partition

281. Which term describes a file system for optical disk media?

- extended partition
- **CDFS**
- logical drive
- active partition

282. Which term describes a type of partition that would only exist on a hard disk that has an MBR?

- extended partition
- **logical drive**
- basic disk
- active partition

283. Which term describes a type of storage device that supports a partition to be extended into adjacent unallocated space as long as it is contiguous?

- NTFS
- **basic disk**
- FAT32
- formatting

284. Which term describes a general name for physical areas on a hard drive?

- NTFS
- **partition**
- FAT32
- formatting

285. Which term describes a partition scheme that takes a portion of disk space of 512 bytes long and that contains the boot loader?

- NTFS
- **MBR**
- FAT32
- formatting

286. Which term describes a type of storage device that supports a volume that can span across more than one disk?

- NTFS
- **dynamic disk**
- FAT32
- formatting

287. A technician is booting a laptop that has Windows 10 installed with 2 GB RAM. The boot process is currently working on the following step:

NTOSKRNL.EXE starts the login file called WINLOGON.EXE. What is the next step that will happen in the boot process?

- **WINLOGON.EXE displays the Windows Welcome screen.**
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- Winload uses the path specified in BOOTMGR to find the boot partition.

288. A user is booting a tablet that has Windows 10 installed. The boot process is currently working on the following step: WINLOGON.EXE displays the Windows Welcome screen. What is the next step that will happen in the boot process?

- **There are no more steps, the boot process is complete.**
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- Winload uses the path specified in BOOTMGR to find the boot partition.

Explanation: The Windows 10 boot process is as follows:

- 1 . PreBoot: POST or Power-On Self-Test loads firmware settings. It checks for a valid disk system, and if the system is good to go for the next phase. If the computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.
- 2 . Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.
- 3 . Windows OS Loader: WinLoad.exe loads important drivers to kick start the Windows Kernel. The kernel uses the drivers to talk to the hardware and do rest of the things required for the boot process to continue.
- 4 . Windows NT OS Kernel: This is the last stage which picks up the Registry settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen

289. A manager is booting a tablet that has Windows 8 installed. The boot process is currently working on the following step: POST. What is the next step that will happen in the boot process?

- **BIOS locates and reads the configuration settings that are stored in the CMOS memory.**
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- The Windows kernel takes over the boot process.
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.

Explanation: Boot Sequence for Windows:

- Power on Self Test (POST)
- POST for each adapter card that has a BIOS
- BIOS reads the MBR
- MBR takes over control of the boot process and starts BOOTMGR
- BOOTMGR reads the Boot Configuration Data file to know which OS to load and where to find the OS on the boot partition
- BOOTMGR invokes WINLOAD.EXE in order to load the NTOSKRNL.EXE file and HAL.DLL
- BOOTMGR reads the registry files and loads device drivers
- NTOSKRNL.EXE starts the WINLOGON.EXE program and displays the Windows login screen.

290. An accountant is booting a PC that has Windows 8 installed. The boot process is currently working on the following step: BIOS locates and reads the configuration settings that are stored in the CMOS memory. What is the next step that will happen in the boot process?

- **The BIOS boots the computer using the first drive that contains a valid boot sector.**

- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- The Windows kernel takes over the boot process.
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.

Explanation: The Windows 10 boot process is as follows:

- 1 . PreBoot: POST or Power-On Self-Test loads firmware settings. It checks for a valid disk system, and if the system is good to go for the next phase. If the computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.
- 2 . Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.
- 3 . Windows OS Loader: WinLoad.exe loads important drivers to kick start the Windows Kernel. The kernel uses the drivers to talk to the hardware and do rest of the things required for the boot process to continue.
- 4 . Windows NT OS Kernel: This is the last stage which picks up the Registry settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen.

291. A network analyst is booting a PC that has Windows 7 installed with 2 GB RAM. The boot process is currently working on the following step: The code in the boot sector is executed and the control of the boot process is given to Windows Boot Manager. What is the next step that will happen in the boot process?

- **Winload uses the path specified in BOOTMGR to find the boot partition.**
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- The Windows kernel takes over the boot process.
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.

292. An analyst is booting a desktop that has Windows 7 installed with 4 GB RAM. The boot process is currently working on the following step: Winload uses the path specified in BOOTMGR to find the boot partition. What is the next step that will happen in the boot process?

- **WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.**
- There are no more steps, the boot process is complete.
- WINLOGON.EXE displays the Windows Welcome screen
- NTOSKRNL.EXE starts the login file called WINLOGON.EXE.

Explanation: The Windows 10 boot process is as follows:

- 1 . PreBoot: POST or Power-On Self-Test loads firmware settings. It checks for a valid disk system, and if the system is good to go for the next phase. If the

computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.

2. Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.

3. Windows OS Loader: WinLoad.exe loads important drivers to kick start the Windows Kernel. The kernel uses the drivers to talk to the hardware and do rest of the things required for the boot process to continue.

4. Windows NT OS Kernel: This is the last stage which picks up the Registry settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen

293. A gamer is booting a desktop that has Windows 7 installed on dynamic drives. The boot process is currently working on the following step:

WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers. What is the next step that will happen in the boot process?

- **The Windows kernel takes over the boot process.**
- There are no more steps, the boot process is complete.
- WINLOGON.EXE displays the Windows Welcome screen
- NTOSKRNL.EXE starts the login file called WINLOGON.EXE.

294. A technician is booting a laptop that has Windows 10 installed with 2 GB RAM. The boot process is currently working on the following step: The Windows kernel takes over the boot process. What is the next step that will happen in the boot process?

- **NTOSKRNL.EXE starts the login file called WINLOGON.EXE.**
- There are no more steps, the boot process is complete.
- WINLOGON.EXE displays the Windows Welcome screen
- The Windows kernel takes over the boot process.

295. A user is booting a laptop that has Windows 10 installed. The boot process is currently working on the following step: WINLOGON.EXE displays the Windows Welcome screen. What is the next step that will happen in the boot process?

- WINLOGON.EXE displays the Windows Welcome screen
- NTOSKRNL.EXE starts the login file called WINLOGON.EXE.
- **There are no more steps, the boot process is complete.**
- The Windows kernel takes over the boot process.

Explanation: The Windows 10 boot process is as follows:

1 . PreBoot: POST or Power-On Self-Test loads firmware settings. It checks for a valid disk system, and if the system is good to go for the next phase. If the computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.

2 . Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the

OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.

3 . Windows OS Loader: WinLoad.exe loads important drivers to kick start the Windows Kernel. The kernel uses the drivers to talk to the hardware and do rest of the things required for the boot process to continue.

4 . Windows NT OS Kernel: This is the last stage which picks up the Registry settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen

296. A manager is booting a tablet that has Windows 8 installed. The boot process is currently working on the following step: The Windows kernel takes over the boot process. What is the next step that will happen in the boot process?

- The Windows kernel takes over the boot process.
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- WINLOGON.EXE displays the Windows Welcome screen
- **NTOSKRNL.EXE starts the login file called WINLOGON.EXE.**

Explanation: The Windows 10 boot process is as follows:

1. PreBoot: POST or Power-On Self-Test loads firmware settings. It checks for a valid disk system, and if the system is good to go for the next phase. If the computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.

2. Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.

3. Windows OS Loader: WinLoad.exe loads important drivers to kick start the Windows Kernel. The kernel uses the drivers to talk to the hardware and do rest of the things required for the boot process to continue.

4. Windows NT OS Kernel: This is the last stage which picks up the Registry settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen.

297. Users in a company have complained about network performance. After investigation, the IT staff has determined that the attacker was using a specific technique that affected the TCP three-way handshake. What is the type of network attack?

- DDoS
- **SYN flood**
- DNS poisoning
- zero-day

Explanation: The TCP SYN flood attack exploits the TCP three-way handshake. The threat actor continually sends TCP SYN session request packets with a randomly spoofed source IP address to an intended target.

298. Users in a company have complained about network performance. After investigation, the IT staff has determined that the attacker is using a technique that compares hashed passwords to potential hashes the hacker has. What is the type of network attack?

- **rainbow table**
- DDoS
- DNS poisoning
- SYN flood

299. Users in a company have complained about network performance. After investigation, the IT staff has determined that the DNS server was sent with an enormous amount of false requests, thus overwhelming the server. What is the type of network attack?

- DNS poisoning
- SYN flood
- **DoS**
- zero-day

300. Users in a company have complained about network performance. After investigation, the IT staff has determined that the attacker is using a vulnerability that is known to the software vendor, but not patched yet. What is the type of network attack?

- **zero-day**
- DDoS
- DNS poisoning
- SYN flood

301. Users in a company have complained about network performance. After investigation, the IT staff has determined that zombies were used to attack the firewall. What is the type of network attack?

- **DDoS**
- DNS poisoning
- SYN flood
- zero-day

302. Users in a company have complained about network performance. After investigation, the IT staff has determined that zombies were used to attack the firewall. What is the type of network attack?

- zero-day
- dictionary
- SYN flood
- **DDoS**

303. Users in a company have complained about network performance. After investigation, the IT staff has determined that the attacker is using a table of words that potentially could be used as passwords. What is the type of network attack?

- **dictionary**
- SYN flood
- zero-day
- DNS poisoning

304. Users in a company have complained about network performance. After investigation, the IT staff has determined that the attacker injected false records on the server that translates IP addresses to domain names. What is the type of network attack?

- zero-day
- **DNS poisoning**
- dictionary
- SYN flood

305. What is required as an additional verification mechanism on iOS mobile devices when setting up biometric screen locks, such as Touch ID or Face ID?

- **a passcode**
- a swipe code
- a linked email account
- a pattern lock

Explanation: When setting up Touch ID and Face ID, you need to enter your passcode, or to create a passcode if one is not previously set up. The passcode will be used as an alternative manner to verify your identity.

306. Which situation can be prevented by creating a UEFI password?

- malware installing a keystroke logger to collect user login credentials
- an unauthorized person acting as the logged in user on an unlocked computer
- a hacker using a password obtained through phishing to access network data
- **an unauthorized person changing the boot order on the computer to boot to another OS**

307. A PC technician has been asked by a supervisor to recommend a security solution for a company that wants a device to monitor incoming and outgoing traffic and stop any malicious activity. Which security technique should the technician recommend?

- **Buy an IPS.**
- Implement a RAID.
- Provide security awareness training.
- Use SSL.

308. A PC technician has been asked by a supervisor to recommend a security solution for a machine where the antimalware software cannot remove all of the malware. Which security technique should the technician recommend?

- Implement a RAID.
- Provide security awareness training.

- **Use Windows Safe Mode.**
- Use encryption.

309. A PC technician has been asked by a supervisor to recommend a security solution for preventing tailgating. Which security technique should the technician recommend?

- **Use a mantrap.**
- Implement a RAID.
- Provide security awareness training.
- Use encryption.

310. A PC technician has been asked by a supervisor to recommend a security solution for drive redundancy. Which security technique should the technician recommend?

- Buy an ASA.
- Use a VPN.
- Implement dual authentication.
- **Implement a RAID.**

311. A PC technician has been asked by a supervisor to recommend a security solution for phishing. Which security technique should the technician recommend?

- **Provide security awareness training.**
- Buy an ASA.
- Use a VPN.
- Employ ping sweeps.

312. A PC technician has been asked by a supervisor to recommend a security solution for protecting a computer used to log in at a dental clinic from someone using a bootable disk containing hacking tools. Which security technique should the technician recommend?

- Buy an ASA.
- Use a VPN.
- Run vulnerability scanners.
- **Disable ports.**

313. A PC technician has been asked by a supervisor to recommend a security solution for a manager traveling who needs access to internal corporate resources. Which security technique should the technician recommend?

- Buy an ASA.
- **Use a VPN.**
- Disable ports.
- Run vulnerability scanners.

314. Why would a gamer need to use the move command?

- **to relocate a file from one Windows directory to another one**
- to prepare a hard drive to accept Windows files
- to manage a PCs drives, disks, partitions, volumes, and virtual drives
- to copy files, directories, and subdirectories from one location to another

315. Why would a gamer need to use the copy command?

- to move that file to a different Windows directory while also leaving the file in the current location
- to prepare a hard drive to accept Windows files
- to manage a PCs drives, disks, partitions, volumes, and virtual drives
- **to copy files, directories, and subdirectories from one location to another**

316. Why would a university student need to use the robocopy command?

- **to copy a group of files from one Windows directory to another**
- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- to shutdown several remote computers one at a time
- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system

317. Why would a university student need to use the xcopy command?

- **to copy files, directories, and subdirectories from one location to another**
- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- to shutdown several remote computers one at a time
- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system

318. Why would a technical support representative need to use the format command?

- **to prepare a hard drive to accept Windows files**
- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- to shutdown several remote computers one at a time
- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system

319. Why would a technical support representative need to use the bootrec command?

- **to help to repair the MBR that is suspected of having issues**
- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- to shutdown several remote computers one at a time
- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system

320. Why would a technical support representative need to use the ipconfig command?

- **to display the IPv6 address of the PC**
- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- to shutdown several remote computers one at a time

- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system

321. Why would a user need to use the netstat command?

- **to verify activity on the PC by displaying all active TCP connections on the device**
- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- to shutdown several remote computers one at a time
- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system

322. Why would a user need to use the nslookup command?

- **to query the Domain Name System (DNS) to get domain names and mapping information**
- to scan and verify the integrity of all protected system files and replace incorrect versions with correct versions
- to shutdown several remote computers one at a time
- to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system

323. Why would a manager need to use the ping command?

- **to quickly verify connectivity by sending echo-request messages to the destination and receiving a series of echo-reply messages from that destination**
- to change from the current working folder to another folder
- to create a new Windows directory
- to remove an empty directory

324. What are two probable causes of a user unable to access local resources such as file shares or printers on a wired network? (Choose two.)

- **bad cabling**
- **DNS name resolution not working**
- ISP down
- incorrect gateway address
- poor Wi-Fi signal

Explanation: There are many issues which can cause local resources to be unavailable. These include bad cabling, a switch or router not functioning, a firewall blocking traffic, DNS name resolution not working, or failed services.

325. The IT department has just purchased 15 wireless access points in order to provide full wireless coverage for all 100 employees within the company and is looking to deploy the most secure and scalable wireless implementation. Which open source authentication method would perform authentication on behalf of all 15 wireless network devices?

- TACACS+
- TKIP
- **RADIUS**
- WPA2-PSK

Explanation: RADIUS and TACACS+ both use a separate server that performs authentication on behalf of network devices. However, RADIUS is an open standard and provides greater compatibility.

326. A technician is upgrading many PCs used within the company. How should the technician dispose of an old inkjet printer cartridge?

- **Recycle following local regulations.**
- Give it to your neighbor.
- Take it home.
- Seal in a plastic bag before putting in the garbage.

327. A technician is about to begin preventive maintenance on a company PC. In which situation would ESD be an issue?

- when walking across a carpeted area and then touching a keyboard that is attached to a tower PC
- when installing a UPS
- while attaching speakers to a surround sound card
- **when installing a processor**

328. A client packet is received by a server. The packet has a destination port number of 67. What service application is the client requesting?

- **DHCP**
- SSH
- Telnet
- SMTP

329. A client packet is received by a server. The packet has a destination port number of 443. What service application is the client requesting?

- **HTTPS**
- SSH
- Telnet
- SMTP

330. A client packet is received by a server. The packet has a destination port number of 69. What service application is the client requesting?

- **TFTP**
- SSH
- Telnet
- SMTP

331. A client packet is received by a server. The packet has a destination port number of 445. What service application is the client requesting?

- **SMB/CIFS**
- SSH
- Telnet
- SMTP

332. A client packet is received by a server. The packet has a destination port number of 548. What service application is the client requesting?

- **AFP**
- HTTP
- TFTP

- POP3

333. A client packet is received by a server. The packet has a destination port number of 80. What service application is the client requesting?

- **HTTP**
- POP3
- TFTP
- NetBIOS (NetBT)

334. A client packet is received by a server. The packet has a destination port number of 3389. What service application is the client requesting?

- **RDP**
- HTTP
- TFTP
- POP3

335. Why would a user need to use the gpupdate command?

- to change from the current working folder to another folder
- to verify the settings that are suspected to be incorrect
- **to make the PC synchronize with new group policy settings**
- to create a new Windows directory

336. Which protocol is used by Windows for file and printer sharing?

- **SMB**
- SMTP
- HTTPS
- IMAP

Explanation: SMB (Server Message Block) is the protocol used for file and printer sharing by Windows. SMTP and IMAP are protocols used in email services. HTTPS is the protocol used for secure web browsing.

337. Which laptop LCD technology uses tilting crystals to provide a much higher contrast ratio than other types?

- **Vertical alignment (VA)**
- In-Plane switching (IPS)
- Twisted Nematic (TN)
- Organic light-emitting diode (OLED)

Explanation: Vertical alignment (VA) laptop display technology uses tilting crystals to provide a much higher contrast ratio than other types. In-Plane switching (IPS) and Twisted Nematic (TN) do not have this feature. Organic light-emitting diode (OLED) displays are not used in laptops.

338. Which two statements are true regarding GPT partitions? (Choose two.)

- **They are commonly used in computers with UEFI firmware.**
- They are commonly used in computers with BIOS based firmware.
- **They store a backup of the partition table.**
- They have a maximum partition size of 2TB.
- They store the partition and boot data in one place.

Explanation: GPT partitions are commonly used in computers with UEFI firmware. They store a backup of the partition table and can support up to 128 partitions. The maximum partition size is 9.4ZB.

339. A technician wishes to use the reset option to repair a Windows 10 installation and chooses the option that will retain the user's personal files. Which statement is true based on using this option?

- All user files and applications will be restored together with the complete reinstallation of Windows 10.
- **Only user files will be restored together with the complete reinstallation of Windows 10.**
- All user files and applications will be deleted, and a complete reinstallation of Windows 10 will occur.
- Only corrupt files of the Windows 10 installation will be replaced and repaired.

Explanation: By using the reset process from within the recovery area, it will remove all apps and programs, change the computer's settings back to their defaults, and reinstall Windows 10 without removing any user personal data files.

340. A user is trying to execute a file using elevated permission. The user right-clicks the file, chooses Run as Administrator, and chooses Yes in the User Account Control (UAC) window. The operation fails. What is the reason?

- The UAC does not have the elevated privileges option.
- **The user is not a member of the administrator group.**
- The directory housing the file is read-only.
- The login password of the user is invalid.

Explanation: An administrator password is required to open or execute a file using elevated permission, or the current user must belong to the Administrator group.

341. What is a possible situation when it might be necessary to boot Windows 10 from a bootable recovery USB device?

- to disable background services
- to delete registry keys
- to partition the hard drive
- **to repair the operating system**

Explanation: You can boot Windows 10 from a repair boot USB drive and repair your computer with corresponding recovery tools, such as bootrec commands. A Windows 10 repair boot USB is a bootable recovery drive made with USB.

342. An accountant is booting a PC that has Windows 10 installed. The boot process is currently working on the following step: BIOS locates and reads the configuration settings that are stored in the CMOS memory. What is the next step that will happen in the boot process?

- **The BIOS boots the computer using the first drive that contains a valid boot sector.**
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- The Windows kernel takes over the boot process.
- WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.

Explanation: The Windows 10 boot process is as follows:

- 1 . PreBoot: POST or Power-On Self-Test loads firmware settings. It checks for a valid disk system, and if the system is good to go for the next phase. If the computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.
- 2 . Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.
- 3 . Windows OS Loader: WinLoad.exe loads important drivers to kick start the Windows Kernel. The kernel uses the drivers to talk to the hardware and do rest of the things required for the boot process to continue.
- 4 . Windows NT OS Kernel: This is the last stage which picks up the Registry settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen.

343. A manager is booting a tablet that has Windows 10 installed. The boot process is currently working on the following step: The Windows kernel takes over the boot process. What is the next step that will happen in the boot process?

- **NTOSKRNL.EXE starts the login file called WINLOGON.EXE.**
- The Windows kernel takes over the boot process.
- WinLoad reads the registry files, chooses a hardware profile, and loads the device drivers.
- WINLOGON.EXE displays the Windows Welcome screen

Explanation: The Windows 10 boot process is as follows:

1. PreBoot: POST or Power-On Self-Test loads firmware settings. It checks for a valid disk system, and if the system is good to go for the next phase. If the computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.
2. Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.
3. Windows OS Loader: WinLoad.exe loads important drivers to kick start the Windows Kernel. The kernel uses the drivers to talk to the hardware and do rest of the things required for the boot process to continue.
4. Windows NT OS Kernel: This is the last stage which picks up the Registry

settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen.

344. An analyst is booting a desktop that has Windows 10 installed with 4 GB RAM. The boot process is currently working on the following step: Winload uses the path specified in BOOTMGR to find the boot partition. What is the next step that will happen in the boot process?

- **WinLoad loads two files that make up the core of Windows: NTOSKRNL.EXE and HAL.DLL.**
- The BIOS boots the computer using the first drive that contains a valid boot sector.
- The code in the boot sector is executed and the control of the boot process is given to Windows Boot Manager.
- The Windows kernel takes over the boot process.

Explanation: The Windows 10 boot process is as follows:

1. PreBoot: POST or Power-On Self-Test loads firmware settings. It checks for a valid disk system, and if the system is good to go for the next phase. If the computer has a valid MBR, i.e. Master Boot Record, the boot process moves further and loads Windows Boot Manager.
2. Windows Boot Manager: This step determines if you have multiple OS installed on your computer. If yes, then it offers a menu with the names of the OSs. When you select the OS, it will load the right program, i.e. Winload.exe to boot you into the correct OS.
3. Windows OS Loader: WinLoad.exe loads important drivers to kick start the Windows Kernel. The kernel uses the drivers to talk to the hardware and do rest of the things required for the boot process to continue.
4. Windows NT OS Kernel: This is the last stage which picks up the Registry settings, additional drivers, etc. Once that has been read, the control is taken by the system manager process. It loads up the UI, the rest of the hardware and software. That's when you finally get to see your Windows 10 Login screen

345. A user notes that the username and password are automatically populated in the Microsoft Edge browser when logging into a secure site. When the user tries to log into the same site using Google Chrome, the username and password do not save automatically. Why is this occurring?

- Google Chrome does not support that secure site.
- The certificate for that site has not been authenticated.
- **Google Chrome does not automatically save web credentials.**
- The Google Chrome browser is corrupt.

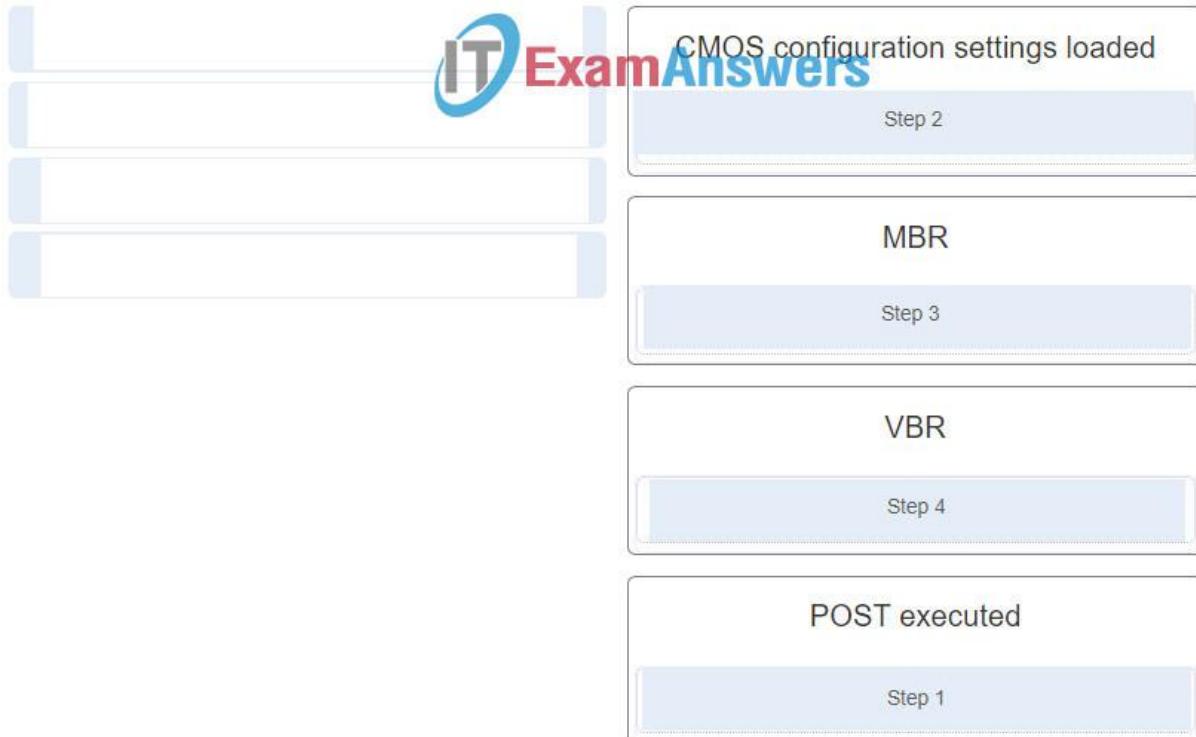
Explanation: Web credentials do not save for sites accessed by browsers other than Internet Explorer and Edge. Credentials created with other browsers must be managed from within that browser.

346. Which statement is true regarding libraries in Windows 10?

- Libraries allow Windows 10 to support file names longer than 20 characters.
- **Libraries allow Windows 10 to link multiple different directories.**
- Libraries allow Windows 10 to enforce the EFS file system.
- Libraries allow Windows 10 to index files faster.

Explanation: Libraries in Windows 10 allow multiple different directories to be linked together in one location.

347. Match the steps that will lead to the loading of bootmgr.exe in a 32 bit Windows 10 environment.



348. Select the Windows 10 version that best meets the described use.



Used for personal computing and gaming with built-in features like family safety and parental control.

Windows 10 Home

Used in an academic environment with volume licensing options.

Windows 10 Education

Used in small business environments with built-in security, productivity, and management features.

Windows 10 Pro

Used in large to mid-size business environments requiring advanced security and management features.

Windows 10 Enterprise

349. Match the file system with the respective description.

	Supports partition sizes up to 16 exabytes and incorporates file system security features and extended attributes.
	NTFS
	Usually used on flash drives as it can support files larger than 4GB.
	ExFAT
	Supports partition sizes up to 2TB or 2,048GB.
	FAT32
	Created specifically for optical disk media.
	CDFS
	A network-based file system that allows file access over the network.
	NFS

350. A corporation would like to use three or more factors for the password authentication policy. How can this be achieved?

- 2FA
- SFA
- bitlocker
- **MFA**

Explanation: MFA (Multi-Factor Authentication) requires users to present at least two, if not more, types of authentication. 2FA (Two-Factor authentication), also sometimes referred to as 2-step verification, is a security approach requiring users to present two factors for authentication for accessing an account. SFA (Single-Factor Authentication) requires users to authenticate with only one type of evidence for authentication, usually a password. Bitlocker encrypts drives.

351. A person has started a new technical job. In which situation would ESD be an issue?

- while exchanging one laptop AC adapter with one that is not from the original equipment manufacturer
- when using a grounded mat and working on a computer on an ungrounded workbench
- **when replacing a motherboard**
- when installing a dual-voltage power supply

352. A manager is booting a tablet that has Windows 10 installed. The boot process is currently working on the following step: WINLOGON.EXE displays the Windows Welcome screen. What is the next step that will happen in the boot process?

- Winload uses the path specified in BOOTMGR to find the boot partition.
- The BIOS boots the computer using the first drive that contains a valid boot sector.
- The code in the boot sector is executed and the control of the boot process is given to Windows Boot Manager.
- **There are no more steps, the boot process is complete.**

Explanation: Boot Sequence for Windows:

- Power on Self Test (POST)
- POST for each adapter card that has a BIOS
- BIOS reads the MBR
- MBR takes over control of the boot process and starts BOOTMGR
- BOOTMGR reads the Boot Configuration Data file to know which OS to load and where to find the OS on the boot partition
- **BOOTMGR invokes WINLOAD.EXE in order to load the NTOSKRNL.EXE file and HAL.DLL**
- **BOOTMGR reads the registry files and loads device drivers**
- **NTOSKRNL.EXE starts the WINLOGON.EXE program and displays the Windows login screen**

At this point, the NT kernel takes over. The NT kernel is the heart of all Windows operating systems. The name of this file is NTOSKRNL.EXE. It starts the login file called WINLOGON.EXE and displays the Windows Welcome screen.

IT Essentials v8.0 – A+ 220-1101 Certification Practice Exam Answers

1. What characteristic best describes a stylus?

- an input device for playing games and flight simulation applications
- an input device that digitizes an image by placing the document on a flat glass surface and scanning from underneath
- **a pen-like tool that allows input by touching the surface of the screen**

- a device that allows the use of one set of keyboard, mouse, and monitor to control multiple computers

2. A network administrator would like to use one keyboard, mouse, and display to monitor and control multiple servers in the server room. Which device should the administrator purchase to accomplish this?

- VR headset
- **KVM switch**
- joystick
- digitizer

Explanation: A keyboard, video, mouse (KVM) switch is a hardware device that can be used to control more than one computer from a single set of devices, often called a console, consisting of a keyboard, video monitor, and mouse.

3. A small company is setting up a new remote satellite office. Employees in the remote office need to access network resources from the main office of the company. An IT manager is deciding whether to deploy thin or thick clients at the remote office. What is the key technical factor to be considered?

- network sharing requirements
- **internet connection bandwidth between the main and remote office**
- RAID level required
- requirements for the display screens between thin and thick clients

Explanation: Thick clients are standard computers that have their own operating system, applications, and local storage. They are stand-alone systems and all of the processing is performed locally on the computer. On the other hand, thin clients are typically low-end network computers that rely on remote servers to perform all data processing. Thin clients in a remote office will require a reliable, high-bandwidth, internet connection to a server. Typically thin clients do not have any internal storage and have limited local resources.

4. A customer asks for a solution to a printer problem that is beyond the knowledge level of the technician. What should the technician do?

- Try to fix the problem anyway.
- **Gather as much information as possible and escalate the problem.**
- Tell the customer to call the printer manufacturer to fix the problem.
- Ask the customer to call again when another technician can provide a solution to the problem.

Explanation: Trying to fix a problem that is beyond the knowledge level of the technician may create additional problems.

5. After consulting the manufacturer manuals, a technician applies a series of recommended solutions that resolve a problem with a workstation computer. What is the next step in the troubleshooting process that the technician should perform?

- **Verify the solution and confirm full system functionality.**
- Test the theory of probable cause.
- Document the findings, actions, and outcomes.
- Determine the next steps to resolve the problem.

Explanation: After the recommended solutions have been applied to resolve the problem, full system functionality should be verified and preventive measures implemented if applicable. This would be followed by documenting the solution and actions. Determining the next steps to resolve the problem and testing the theory of probable cause have already been completed in this scenario.

6. What is a characteristic of DDR SDRAM?

- **It transfers data twice per clock cycle compared to once per clock cycle for SDRAM.**
- DDR SDRAM modules have double the number of pins of SDRAM memory modules.
- It is dynamic memory whereas SDRAM is static memory.
- It operates at double the voltage of SDRAM memory.

Explanation: DDR SDRAM transfers data twice per clock cycle, whereas SDRAM transfers data once each clock cycle. Both DDR SDRAM and SDRAM are forms of dynamic memory. The difference in data transfer rate between DDR SDRAM and SDRAM is not determined by the number of pins, nor the operating voltage.

7. A user has just upgraded a gaming system with 8GB of DDR3 800 MHz RAM and still finds that the system lags during gameplay. The system has a high end graphics card, liquid cooling, and a 7,200 rpm EIDE drive. What can the user do to improve system performance?

- Change the voltage setting for the RAM.
- **Replace the EIDE drive with an SSD.**
- Replace the liquid cooling system with a high speed ball bearing fan cooling system.
- Add two more case fans.

Explanation: Because the system has already has a high end graphics card and a liquid cooling system, it is already optimized for the gaming environment and the introduction of the new additional RAM would add to its performance. The only hardware component that could result in the lag in performance in this scenario is the hard drive, which would perform much faster when replaced with an SSD.

8. A user has connected a USB 3.0 device to a computer using a 3 ft (1m) USB 3.0 cable. However, instead of an expected data transfer rate of up to 5 Gb/s, the user notes a data transfer rate of no more than 450 Mb/s. What is the most probable reason for this lower than expected data transfer rate?

- **The device was connected to a USB 2.0 port on the computer.**

- The cable used exceeds the maximum length that allows USB 3.0 to transfer data at 5Gb/s.
- The device was connected to a USB 1.1 port on the computer.
- The USB 3.0 cable is faulty.

Explanation: USB 2.0 allows transmission speeds up to 480 Mb/s and USB 1.1 allows transmission rates of up to 12 Mb/s in full-speed mode. A transmission speed of 450 Mb/s would indicate that a USB 2.0 port was used on the computer because USB devices can only transfer data up to the maximum speed allowed by the specific port. The generally accepted maximum length of a USB 3.0 cable is 9.8 ft (3m) which is three times the length of the cable used in this example, so the cable length is acceptable for full USB 3.0 capability. If a USB cable is faulty then no data transfer at all is likely to occur.

9. A user is connecting a home entertainment system and wants to use one cable to carry all the digital video and audio signals from the source device to the LCD TV. What type of cable should the user use?

- DVI-D
- **HDMI**
- VGA
- S-Video

Explanation: A DVI-D cable will carry video digital signals only, and the S-Video and VGA cable types carry only analog video signals. An HDMI cable will carry both the audio and video digital signals.

10. A user needs to connect a cable to the PC to deliver digital video signals only. Which type of cable should be used?

- VGA
- HDMI
- **DVI-D**
- composite
- Mini-HDMI

Explanation: HDMI and Mini-HDMI cables will carry both audio and video digital signals. VGA and composite cables will carry analog video signals. DVI-D cables will carry Digital video signals only.

11. After questioning a user about the problems being experienced with a PC operating system, the support technician suspects that a recent service pack installation has failed. Which step of the troubleshooting process has the technician just concluded?

- Test the theory to determine the cause of the problem.
- Document findings, actions, and outcomes.
- **Establish a theory of probable cause.**
- Establish a plan of action to resolve the problem.

Explanation: By suspecting that an operating system service pack has failed to install successfully, the technician has established a theory of probable cause of the problem. The next step would be to test the theory to determine the cause of the problem, followed by establishing a plan of action to resolve the problem. Documentation is the final step and would occur after the solution has been verified and the system restored to full functionality.

12. A user is setting up a home wireless network. Which type of device must the user have in order to establish the wireless network and provide access to the internet for multiple home devices?

- hub
- switch
- patch panel
- **wireless router**

Explanation: A wireless router connects multiple wireless devices to the network. It will then aggregate the internet access requests from home devices to the internet.

13. A tourist is traveling through the countryside and needs to connect to the internet from a laptop. However, the laptop only has Wi-Fi and Ethernet connections. The tourist has a smartphone with 3G/4G connectivity. What can the tourist do to allow the laptop to connect to the internet?

- Use the smartphone to access web pages and then pass the web pages to the laptop.
- **Enable tethering and create a hotspot.**
- Use an Ethernet cable to connect the smartphone to the laptop.
- Use the smartphone to access the internet through a satellite connection and then share that connection with the laptop.

Explanation: Many cell phones have the ability to connect to other devices through a feature called tethering. The connection can be made using Wi-Fi, Bluetooth, or a USB cable. Once a device is connected, it is able to use the cellular connection of the phone to access the internet. When a cellular phone allows Wi-Fi devices to connect and use the mobile data network, this is called a hotspot.

14. A user wants to purchase a monitor with a viewing area that is 44 inches wide by 16 inches high. What aspect ratio is this?

- 12:24
- **11:4**
- 13:5
- 22:8

Explanation: The aspect ratio of a display is the width divided by the height.

15. Which design specification criterion is most important when designing a computer that will be a thin client whose applications are accessed from a remote virtual server?

- amount of RAM

- amount of local hard drive storage
- number of processor cores
- **speed of network card**

16. A technician is building a workstation that will be used for virtualization. Which two components would the technician use? (Choose two.)

- dual monitors
- high-end graphics card
- liquid cooling
- **maximum amount of RAM**
- **multicore processors**

Explanation: Dual monitors are useful in a video editing station. Liquid cooling assemblies and high-end graphics cards are normally required in high performance gaming systems. A virtualization workstation would need maximum RAM and CPU cores.

17. Which three components would a technician use in building a CAD workstation? (Choose three.)

- TV Tuner card
- high-end sound card
- **specialized graphics card**
- **SSD**
- Windows 7 Home edition
- **maximum RAM**

Explanation: A TV Tuner card is normally used for an home entertainment system and a high end sound card is normally used for a gaming system. Windows 7 Home edition would not be the operating system of choice on a CAD station. A CAD station would normally require a specialized graphics card, large amounts of fast RAM, and a high performance storage device, such as SSD.

18. Which specification would be most important to consider when designing a typical business workstation?

- high-end sound card
- number of displays
- **types of applications**
- network connectivity speed

Explanation: The applications used by the computer user will dictate the amount of hard drive storage space, RAM, and sometimes the number of displays.

19. A technician suspects that a power supply is faulty. How can it be checked?

- by checking the temperature of the power supply

- **by using a multimeter**
- by taking apart the power supply
- by powering up the PC after disconnecting each connector in turn

Explanation: The temperature of the power supply does not indicate if it is operational. A PC technician should never open a power supply as dangerous voltages might still be present even when disconnected. Disconnecting the connectors in turn and powering the PC is not a recommended practice. In the absence of a power supply tester, a multimeter can allow to check if voltages are present.

20. What transfers heat away from the processor first?

- cooling fins
- **thermal compound**
- CPU fan
- case fans

Explanation: Thermal compound is the first item of contact with the CPU, which then dissipates the heat to the cooling fins. The heat is conducted away from the CPU by the CPU fan and finally exhausted through the case fans.

21. Which sequence of steps is required to correctly install a heat sink and fan assembly onto a CPU in a desktop PC?

1. **Apply a small amount of thermal compound to the CPU.**
 2. **Align the heat sink and fan assembly retainers with the holes on the motherboard.**
 3. **Place the fan and heat sink assembly onto the CPU socket.**
 4. **Tighten the fan and heat sink assembly retainers to secure the assembly in place.**
 5. **Connect the assembly power cable to the CPU fan connector on the motherboard.**
1. Connect the assembly power cable to the CPU fan connector on the motherboard.
 2. Align the heat sink and fan assembly retainers with the holes on the motherboard.
 3. Place the fan and heat sink assembly onto the CPU socket.
 4. Tighten the fan and heat sink assembly retainers to secure the assembly in place.
 5. Place the correctly aligned CPU gently into the socket.
1. Place the correctly aligned CPU gently into the socket.
 2. Align the heat sink and fan assembly retainers with the holes on the motherboard.
 3. Place the fan and heat sink assembly onto the CPU socket.
 4. Tighten the fan and heat sink assembly retainers to secure the assembly in place.
 5. Connect the assembly power cable to the CPU fan connector on the motherboard.

1. Apply a small amount of thermal compound to the CPU.
2. Align the heat sink and fan assembly retainers with the holes on the motherboard.
3. Place the correctly aligned CPU gently into the socket.
4. Tighten the fan and heat sink assembly retainers to secure the assembly in place.
5. Connect the assembly power cable to the CPU fan connector on the motherboard.

Explanation: The CPU must be securely installed in its socket on the mother board before the thermal paste is applied, the heat sink and fan assembly is installed, and the fan is connected to the CPU fan power connector on the motherboard.

22. A PC has an older optical drive and two newer hard disk drives Which two connector types would have to exist on the power supply unit to power on all these devices? (Choose two.)

- Molex
- Berg
- SATA
- PS/2
- FireWire

Explanation: A SATA connector is used to connect to the newer SATA hard drives and SATA optical drives. A PS/2 port is used to connect to a mouse or keyboard. A FireWire port is used to connect to Firewire devices such as cameras. A Molex connector is used to connect to older PATA hard drives and optical drives. A Berg connector is used to connect to floppy drives.

23. A technician is required to replace a faulty power supply in a desktop PC. The PC motherboard has a 24-pin ATX socket but the only available replacement power supply is one with a 20-pin connector. Delivery of new power supplies with 24-pin connectors is not expected until the next day, but the user requires the PC to be operational as soon as possible. What can the technician do in these circumstances?

- **The technician can install the power supply and insert the 20-pin connector into the 24-pin socket on the motherboard.**
- Power supplies with 20-pin connectors are not compatible with motherboards with 24-pin sockets, so the technician can do nothing until the new power supplies arrive.
- The technician can use a 20-pin-to-24-pin adaptor to connect the power supply to the motherboard.
- The technician can recover the 24-pin connector from the faulty power supply and attach it to the replacement power supply for connection to the motherboard.

Explanation: 20-pin power supply connectors are compatible with the 24-pin socket on the motherboard, so the replacement power supply can be used

temporarily if necessary. A power supply 20-pin-to-24-pin adaptor does not exist. Power supplies are not considered to be field repairable, so it is not recommended that the technician attempt to modify the power supply connections, although this is not required in this situation.

24. A technician needs to install a new power supply in a PC that has one IDE optical drive, one SATA hard drive, and one PCIe graphics adapter that requires additional power. How many unique power connectors will the power supply require in order to connect to these devices?

- 2
- **3**
- 4
- 5

Explanation: A Molex connector is used to connect older drives like IDE and EIDE drives . A SATA power connector is used with a SATA hard drive. A PCIe graphics card requires a 6- or 8-pin power connector.

25. Which three PC desktop functions are typically provided on the front panel and must be connected to the motherboard? (Choose three.)

- network activity light
- **PC power button**
- **drive activity light**
- **USB connectors**
- CPU temperature indicator
- audio power button

Explanation: USB connectors, PC power button, and drive activity light are the most common PC front panel functions. If available, the network activity light, CPU temperature indicator, and audio power button are not typically located on the front panel of the computer.

26. Which two hardware features would a technician monitor within the BIOS if a computer was suspected of overheating? (Choose two.)

- **CPU clock speed**
- **CPU fan speed**
- motherboard voltage
- hard drive speed
- Trusted Platform Module

Explanation: A technician would use the BIOS to monitor CPU clock speed and CPU fan speed if overheating was suspected. Monitoring the motherboard voltage, hard drive speed, and Trusted Platform Module settings would not provide information relevant to computer overheating.

27. A user has a computer with a single hard drive and a RAID adapter

installed. Which additional component is necessary to complete the RAID installation?

- a USB connection
- a floppy disk drive
- **one or more additional hard drives**
- a DVD drive

Explanation: RAID installations require two or more hard drives. Floppy drives and DVD drives cannot form part of a RAID array. A USB connector may be used to access external hard drives that are not part of a RAID array.

28. A computer technician has recommended a data storage system that combines data striping and parity. The user has a limited budget and is prepared to forego performance to implement this system. Which RAID system would meet these requirements?

- RAID 0
- RAID 1
- **RAID 5**
- RAID 0+1

Explanation: RAID 5 best meets the required storage and cost specifications. RAID 0 provides data striping without redundancy. RAID 1 uses disk mirroring and has a high cost. RAID 0+1 combines data striping and mirroring but also has a high cost.

29. A technician opens up a PC to work on it, and finds that it is very dusty inside. What should the technician do?

- Ignore the dust, as it does not affect the computer.
- Use a lint-free cloth sprayed with a cleaning solution to remove excess dust.
- **Use a can of compressed air to remove excess dust.**
- Use a moistened cotton swab to remove excess dust.

Explanation: Dust inside a PC can cause overheating, fan malfunction, and other problems. Liquid should not be used inside a PC to remove dust; compressed air will blow the dust away from where it has accumulated. Always hold the can upright and avoid dripping any of the fluid on the PC. Care should be taken to make sure that the compressed air does not blow materials back inside the case, and that fan blades are stabilized while using the compressed air.

30. A user replaced a PC CPU with a faster one, but now the PC displays a BSOD on bootup. What is the problem?

- **The CPU voltage is set too high.**
- The CPU multiplier has not been set.
- The front side bus is set too low.
- The CMOS settings have not been saved on bootup.

Explanation: Causes of a BSOD include a corrupt or incompatible driver or incorrect settings for the CPU voltage, which can result in the CPU not functioning correctly and a BSOD.

31. A computer locks up frequently, and no error message can be seen on screen. The problem occurs every time the user attempts to restart the computer. What is the most likely reason for this problem?

- The index service is not running.
- The power supply has failed.
- A startup file has become corrupted.
- **The CPU is overheating.**

Explanation: If the power supply has failed the PC would turn off or could display a stop error message if the failure is partial. The index service not running does not cause a PC to lockup. No startup file is likely to be corrupted as the issue appears during normal operation. An overheating CPU would cause the computer to lockup.

32. What are two possible causes of a computer running slowly? (Choose two.)

- The hard drive has been partitioned.
- **The hard drive is full.**
- The CPU has been overclocked.
- The RAM is not compatible with the motherboard.
- **Not enough RAM is installed in the system.**

Explanation: Not having enough RAM or the computer overheating can cause a computer to run slowly. An overclocked CPU would tend to speed up the computer. If the RAM is not compatible with the motherboard, the computer would not start up. Partitioning a hard drive does not cause the computer to run more slowly.

33. Which type of network consists of several geographically dispersed networks that cover a large area?

- LAN
- **WAN**
- PAN
- SAN

Explanation: A Wide Area Network (WAN) is a collection of geographically dispersed networks.

A Local Area Network (LAN) is a network contained in a single floor, building, or campus.

A Personal Area Network (PAN) is a network that reaches at most 10 meters. A Storage Area Network (SAN) is a network specifically constructed to connect storage devices to each other.

34. A network technician is checking a computer to see if the DHCP client is working correctly. The technician issues the ipconfig /all

command. Which two parameters should the technician review? (Choose two.)

- description
- **default gateway**
- host name
- media state
- **subnet mask**

Explanation: A DHCP server can provide several parameters such as IP address, subnet mask, default gateway, and other optional parameters. The host name, media state, and description are present even if a DHCP server is not found.

35. Which protocol automates assignment of IP addresses on a network, and which port number does it use? (Choose two.)

- **DHCP**
- DNS
- SMB
- 53
- **67**
- 80

Explanation: DNS uses port 53 and translates URLs to IP addresses. SMB provides shared access to files and printers and uses port 445. Port 80 is used by HTTP. HTTP is a protocol used to communicate between a web browser and a server.

36. A technician is setting up a network in a new room. What is the best device to use to connect the PCs to each other and to the rest of the LAN?

- gateway
- firewall
- **switch**
- router

Explanation: A gateway is a router used to interconnect networks and is not necessary in this situation. A hub does not segment a network and allows collisions to take place on the network segment. A switch will interconnect all the devices in a LAN.

37. Which device converts digital signals to analog signals and vice versa?

- hub
- switch
- **modem**
- router

Explanation: Modems are used to connect computers to POTS analog lines. Hubs, routers, and switches work using digital signals at all times.

38. Which networking device transmits data to all ports regardless of the destination address?

- router
- switch
- **hub**
- firewall

Explanation: The purpose of a hub is to extend the cabling range by regenerating and repeating signals. Switches, routers, and firewalls send data to the destination by examining the header of the packet to determine the exit ports.

39. Which device will prevent data from flooding out of every port with the exception of broadcast traffic and traffic to unknown destination addresses?

- modem
- hub
- router
- **switch**

Explanation: A switch will select the outgoing port for every data frame based on the MAC destination address. A hub will flood all ports with any traffic. A router will select the outgoing port based on the IP destination address and the modem is used to connect the LAN to a WAN.

40. Which two types of connector are used for fiber optic cable? (Choose two.)

- **ST**
- RJ-45
- RJ-11
- **SC**
- RCA
- BNC

Explanation: RJ-45 is used to connect twisted pair cables. RJ-11 is used in telephony. BNC is used to connect 10BASE2 cables, a type of coaxial cable also known as thinnet. RCA connectors are used for analog or digital audio or analog video. SC, ST, and LC connectors are used for fiber-optic cables.

41. What are plenum rated cables used for?

- for cables that are used between buildings
- **for cables that are installed inside the floors and ceilings of buildings**
- for cables that are used to connect workstations to wall sockets
- for cables that are used to connect computers back-to-back

Explanation: In case of a fire, a nonplenum rated cable could carry the fire from one part of a building to another. Plenum rated cables contain special

plastic material that retards fire and produces less smoke when subjected to high temperature. These make them suitable to install in areas where air is circulating.

42. Which tool is more commonly used to check the wire mapping on a Category 5e UTP cable once it is terminated on both ends?

- **cable tester**
- tone probe
- multimeter
- oscilloscope

Explanation: The most commonly used tool to check the wire mapping on a UTP cable is a cable tester. The multimeter is more commonly used to check voltages. A tone probe is more commonly used for cable identification. The oscilloscope is more commonly used to test signals.

43. Which security mode supports robust encryption, and can be enabled with password authentication (personal) or server authentication (enterprise)?

- WEP
- WPA
- **WPA2**
- TKIP

Explanation: WEP encrypts data between the wireless access point and the client using a 64-bit or 128-bit encryption key. WPA uses much stronger encryption than WEP encryption. WPA2 is an improved version of WPA. TKIP is a WEP patch that automatically negotiates a new key every few minutes.

44. What is the expected behavior of an ADSL service?

- **The download rate is faster than the upload rate.**
- The upload rate is faster than the download rate.
- The download and upload rates are the same.
- The user can select the upload and download rates based on need.

Explanation: ADSL stands for Asymmetric Digital Subscriber Line. On asymmetric types of service, the download rate is typically higher than the upload rate.

45. A customer who travels frequently wants to know which technology is the most suitable for being connected to the corporate network at all times at low cost. Which network technology would a network administrator recommend?

- satellite
- ISDN
- **cellular**
- microwave

Explanation: Cellular networks can provide access to data networks at any given time. ISDN and microwave networks require a fixed location. Satellite would work, but is very expensive.

46. A technician is troubleshooting a PC unable to connect to the network. What command should be issued to check the IP address of the device?

- tracert
- ping
- nslookup
- **ipconfig**

Explanation: The commands **tracert** and **ping** are used to test the connectivity of the PC to the network. The command **nslookup** initiates a query to an Internet domain name server.

47. Because of limited space on a laptop keyboard, some keys have a dual-purpose. What are these keys called?

- control keys
- alternate keys
- special purpose keys
- **function keys**

Explanation: Special function keys allow the user to access a second function on a dual-purpose key by pressing the Function (Fn) key at the same time the dual-purpose key is pressed.

48. On a laptop keyboard, which three functions can typically be accessed through the use of special function keys? (Choose three.)

- **volume settings**
- **wireless functionality**
- **display brightness**
- Windows Start menu
- Task Manager
- Control Panels

Explanation: Volume settings, wireless functionality, and display brightness usually can each be accessed by pressing the Function (Fn) key along with the appropriate dual-purpose key on the keyboard. The Windows Start menu is accessed by pressing the Windows key. Task Manager is accessed by pressing Ctrl-Shift-Esc. Control Panel is accessed by pressing the Windows key + the letter C.

49. Which three components can a docking station make available to a laptop that a port replicator does not? (Choose three.)

- PS/2 ports
- **additional hard drive**
- **additional optical drive**
- USB ports
- **PCI cards**
- networking ports

Explanation: USB ports, PS/2 ports, and networking ports are found on both port replicators and docking stations. Only docking stations have the ability to connect a laptop to PCI cards, additional hard drives, and optical drives.

50. A technician attempts to increase the brightness of a laptop screen by using the function keys but the attempt fails. What could be the problem?

- The laptop battery is bad.
- The video display driver is corrupt.
- **The inverter has failed.**
- The LCD screen has failed.

Explanation: A failed LCD screen will result in no image being displayed whereas a corrupt video driver or bad battery will not result in a dimmed display. The inverter powers the backlight, which in turn displays and illuminates the image.

51. Where is the integrated Wi-Fi antenna typically located in a laptop?

- on the keyboard
- on the system board
- integrated into the wireless card
- **above the screen**

Explanation: The integrated Wi-Fi antenna is typically located above the screen and is connected to the wireless card by an antenna wire which is located along the sides of the screen.

52. A technician wants to use Remote Desktop to configure another PC. Which firewall port on the remote PC should be open in order for Remote Desktop to work?

- 23
- 20 and 21
- 80
- 115
- 389
- **3389**

Explanation: Port 23 is used for Telnet, port 115 is used by Simple File Transfer Protocol, and port 443 is used by HTTPS. Port 3389 is used by the RDP (Remote Desktop Protocol) to connect to other PCs remotely.

53. What are the two widths of internal hard drives in laptops? (Choose two.)

- **1.8 inches**
- **2.5 inches**
- 3.5 inches
- 5.25 inches
- 3.8 inches

Explanation: Laptop hard drives are 1.8 inches or 2.5 inches in width. Desktop hard drives are 3.5 inches in width. 5.25 inches is the width of optical drives in desktop computers. No components have a width of 3.8 inches.

54. Which laptop component is required to be replaced or upgraded by a technician rather than by a computer user?

- **inverter**
- RAM
- hard drive
- battery

Explanation: RAM, a hard drive, and a battery are all CRUs and can be replaced by the customer. A power inverter is a FRU and requires specialized expertise to replace and should be done by a technician.

55. Which two components of a laptop can be replaced by the user? (Choose two.)

- speakers
- **RAM**
- keyboard
- screen
- **battery**

Explanation: The battery and RAM are considered customer replaceable units (CRUs). The keyboard, speakers, and screen are considered field replaceable units (FRUs).

56. Which type of storage would be best in a tablet computer that belongs to a small child?

- PATA
- eSATA
- SATA
- **SSD**

57. A technician is troubleshooting a network connectivity problem. Pings to the local wireless router are successful but pings to a server on the Internet are unsuccessful. Which CLI command could assist the technician to find the location of the networking problem?

- **tracert**
- ipconfig
- msconfig
- ipconfig /renew

Explanation: The tracert utility (also known as the tracert command or tracert tool) will enable the technician to locate the link to the server that is down. The ipconfig command displays the computer network configuration details. The ipconfig /renew command requests an IP address from a DHCP server. Msconfig is not a network troubleshooting command.

58. A technician troubleshooting a network problem has used CLI

commands to determine that a computer has not been allocated a correct IP address from the DHCP server. Which command can the technician use to solve this problem?

- ping
- ipconfig /release
- tracert
- **ipconfig /renew**

Explanation: The command **ipconfig /renew** will cause the computer to request a new IP address from the DHCP server. The command **ipconfig /release** will remove the current IP address but will not request a new address. The commands ping and tracert are used to test network connectivity.

59. What process takes place in a laser printer after the drum is conditioned for the new latent image?

- charging
- **exposing**
- developing
- fusing
- transferring

Explanation: The drum is conditioned for the new latent image during the charging step.

The printing process involves seven steps for a laser printer:

processing
charging
exposing
developing
transferring
fusing
cleaning

60. What type of printer requires the ribbon to be changed when producing faded and light characters?

- inkjet
- **impact**
- laser
- thermal

Explanation: Inkjet, laser, or thermal printers do not use ribbons.

61. Which two methods are used to directly connect mobile devices such as tablets and smartphones to a data network? (Choose two.)

- WiMax
- **cellular communications**
- Bluetooth
- wired Ethernet
- **Wi-Fi**

Explanation: Mobile devices connect wirelessly to data networks using either Wi-Fi or a telecommunication provider cellular network. Bluetooth is used to connect to peripherals or other local devices over very short distances. Ethernet is a wired network access technology and is not used by mobile devices. Mobile devices do not typically implement WiMAX technology.

62. For mobile devices, what are two advantages of using flash memory storage technology that is the equivalent of solid state drives? (Choose two.)

- **light weight components**
- **power efficiency**
- ease of upgrading
- high capacity
- flash memory storage is field-serviceable

Explanation: The light weight and power efficiency of flash memory components are advantages of using the equivalent of a solid state drive for storage in mobile devices. Flash memory typically does not have the capacity of magnetic storage devices such as hard disk drives. To reduce weight, mobile devices typically do not contain discrete SSD units and the individual flash memory components that are used are not field-serviceable and cannot be upgraded.

63. Which two mobile device components are field replaceable? (Choose two.)

- touch screen
- **SIM card**
- internal SSD
- **battery**
- accelerometer sensors

Explanation: Mobile devices do not typically have any field serviceable components. Field replaceable components are usually limited to the battery, the SIM card, and a memory card.

64. Which setting must be turned on in order to share a printer in Windows 7?

- Sharing
- Share this Printer
- Windows Firewall
- **File and Printer Sharing**

Explanation: File and Printer Sharing must be turned on in order to share a printer in Windows 7. Share this Printer is a setting in Windows XP. Sharing is a setting in Windows Vista. Windows Firewall is not required to be turned on in order to share a printer.

65. What is an advantage of using a printer that is connected to a hardware print server compared with a computer-shared printer?

- A computer that shares a printer always allows for faster printing of documents.

- **A hardware print server is always available to all users.**
- A computer that shares a printer always prioritizes the printing tasks.
- A hardware print server will have more memory to store the print job than a computer will have that shares a printer.

Explanation: A PC sharing a printer is usually running multiple tasks simultaneously besides printing and is therefore slower to process and send documents to the printer. A disadvantage of hardware print servers is that they frequently contain less storage space for the print queue compared with a dedicated print server or a computer-shared printer.

66. A technician wants to allow many computers to print to the same printer, but does not want to affect the performance of the computers. What will the technician do to achieve this?

- Use a software print server.
- Use a computer-shared printer.
- **Use a hardware print server.**
- Install a second printer.

Explanation: A hardware print server allows many users to print to the same printer without using the resources of any computer. A computer-shared printer uses a computer to manage all of the print jobs. There is no software print server. Installing a second printer would reduce the print jobs on any one computer, but would still use computer resources.

67. A user is reporting that an inkjet printer is printing colors different from what the printer should be printing. The printer has separate cartridges for each color and the user changed the cyan cartridge recently. What is the action that could fix the problem?

- **Perform a printer head cleaning.**
- Check for loose printer cables.
- Use a different type of paper.
- Purchase a maintenance kit.

Explanation: A head cleaning routine is needed if the cartridges get clogged or if they are new. Typically, inkjet printers print different colors if one of the cartridges is not able to function properly.

68. Which two field replaceable units could be found in a laser printer maintenance kit? (Choose two.)

- **fuser assembly**
- **pickup rollers**
- power supply
- paper trays
- drum
- toner cartridge

Explanation: Usually, manufacturers include in the maintenance kits the parts that are subject to wear. Such parts could be a fuser assembly, transfer rollers, separation pads, and pickup rollers. Power supplies, and drum and paper trays

are considered replacement parts that are changed at the time of failure, whereas the toner cartridge is considered a consumable.

69. What is best used to clean the heating element on a thermal printer?

- mild solvent
- soap foam
- **isopropyl alcohol**
- distilled water

Explanation: Cleaning the heating element regularly with isopropyl alcohol will extend the life of the printer. Using any of the other substances could damage the printer.

70. A user notices that there is intermittent wireless connectivity on a laptop that is running a wireless PCI Express Micro card using the wireless 802.11n standard. What should the user do to fix the problem?

- Replace the PCI Express Micro card with a Mini-PCIe card.
- Replace the PCI Express Micro card with a Mini-PCI card.
- **Move the laptop to a new location.**
- Replace the OS on the laptop.

Explanation: In this situation the intermittent loss of wireless connectivity could be due to the distance from the access point or some obstruction in the signal path. Moving to a new location would remedy the problem. Replacing the wireless PCI Express Micro card or replacing the OS will not resolve the problem.

71. A technician connects a new LCD monitor for the first time and finds the display very pixilated. What is a possible solution to this problem?

- **Set the screen to native resolution.**
- Change the monitor video connector from DVI to HDMI.
- Power cycle the monitor.
- Set the screen resolution to VGA.

Explanation: The native screen resolution is the optimum design resolution for the monitor and using this should resolve any display issues. Changing the type of video connector and power cycling the monitor is unlikely to resolve this problem. If the display is pixilated, it is most likely at VGA resolution.

72. Which wireless encryption method is the least secure?

- **WEP**
- WPA
- AES
- TKIP

Explanation: WEP is the weakest encryption method. WPA, AES, and TKIP are considered enhancements to the WEP standard and therefore are more secure.

73. What kind of tool or substance is better to use to remove spilled toner on a laser printer?

- mild detergent solution
- compressed air
- regular vacuum cleaner
- **special vacuum cleaner**

Explanation: Specially designed vacuum cleaners with HEPA filters are used to remove toner from any surface. Regular vacuum cleaner filters will not hold the powder. Compressed air will blow the toner off somewhere else and mild detergent solution will mix with the powder causing more problems than it solves.

74. Which feature will assign a computer an IP address even if there is no working DHCP server in the network?

- DNS
- ARP
- WINS
- **APIPA**

Explanation: APIPA is Automatic Private IP Addressing. If there is no working DHCP server, the computer will use a random IP address from the 169.254.X.X class B range. ARP, WINS, and DNS serve other networking purposes.

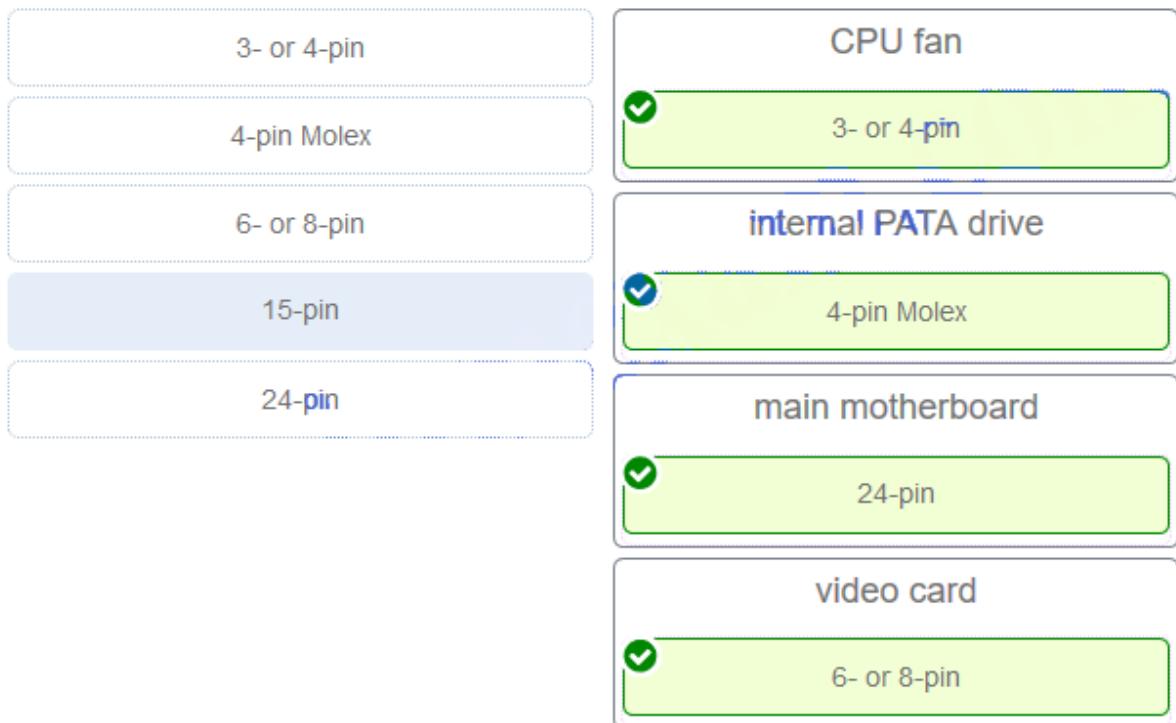
75. A user reports that a laser printer is printing shadow images and letters. Which part should the technician replace to correct this problem?

- network cable
- pick up roller
- **drum**
- fuser

Explanation: The drum is a metal cylinder that holds an electrostatic charge to pick up the toner powder. If the drum is defective, then the charge on the cylinder will not hold the correct latent image to attract the toner.

76. Match the power connector to the device. (Not all options are used.)

Question



77. Refer to the exhibit. Match the type of expansion slot to the letter shown in the graphic. (Not all options are used.)



AGP

IT ExamAnswers
ISA

MCA

PCI

PCIe x1

PCIe x16

A

PCIe x16

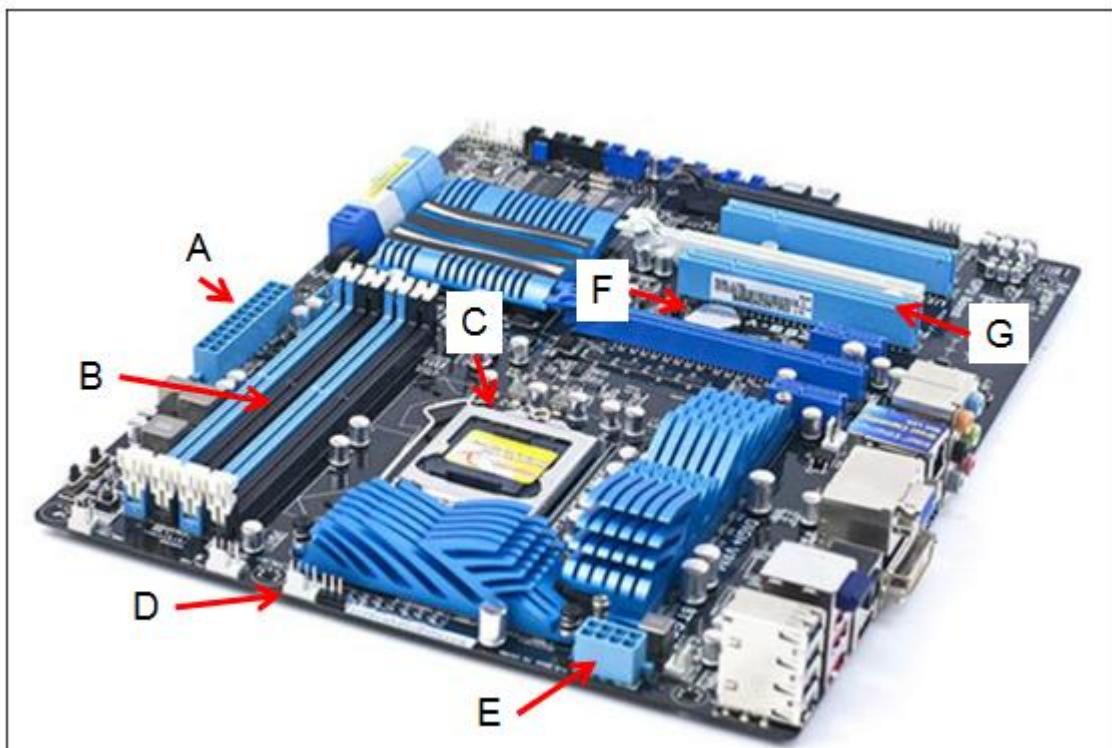
B

PCIe x1

C

PCI

78. Refer to the exhibit. Match the letter found in the exhibit with the description. (Not all options are used.)

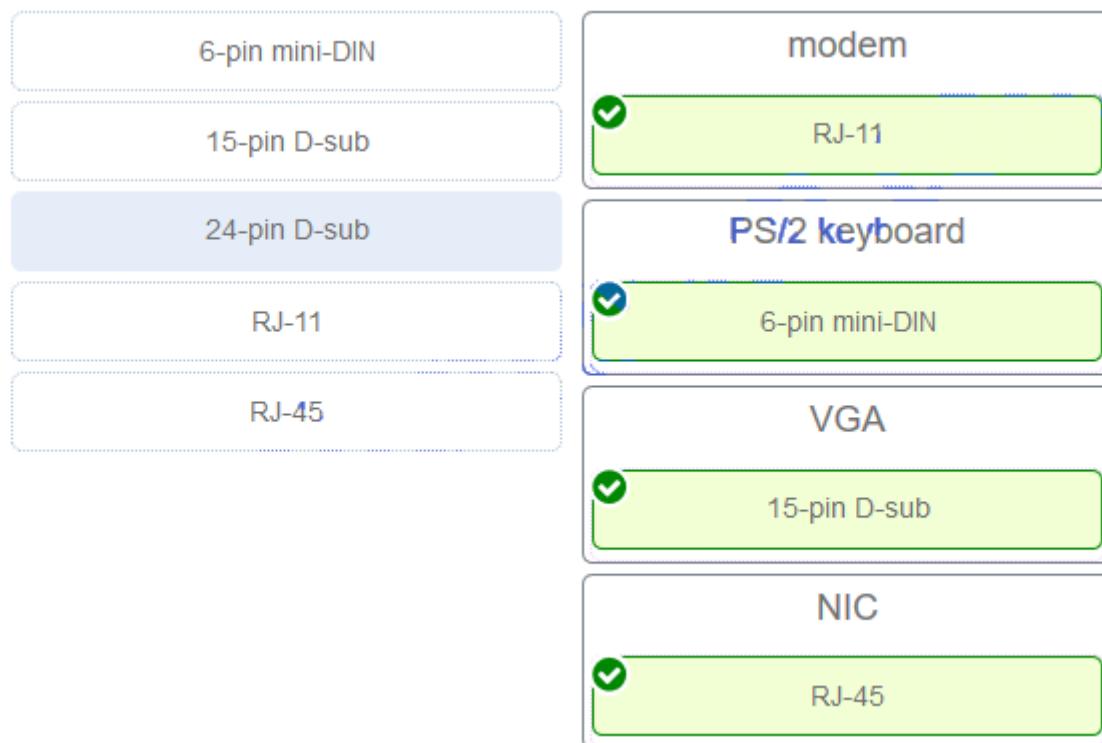


Question & Answer:

A	Auxilliary power socket
B	E
C	Powers CMOS when computer is off
D	F
E	CPU socket
F	C
G	Memory slot
	B
	A

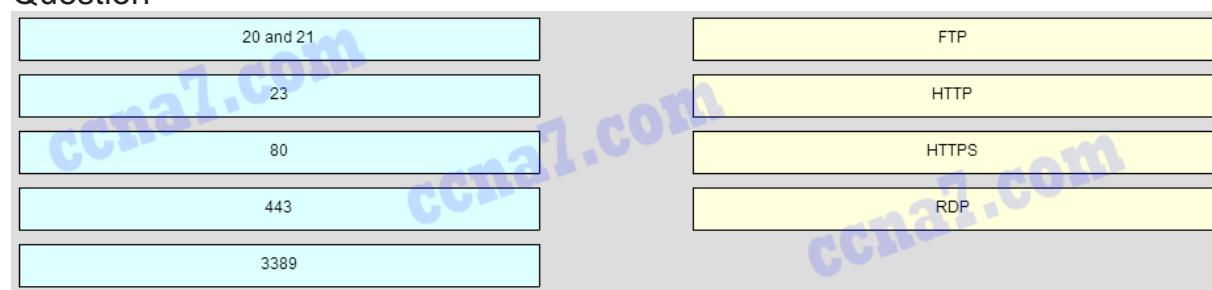
79. Match the connector type to its use. (Not all options are used.)

Question

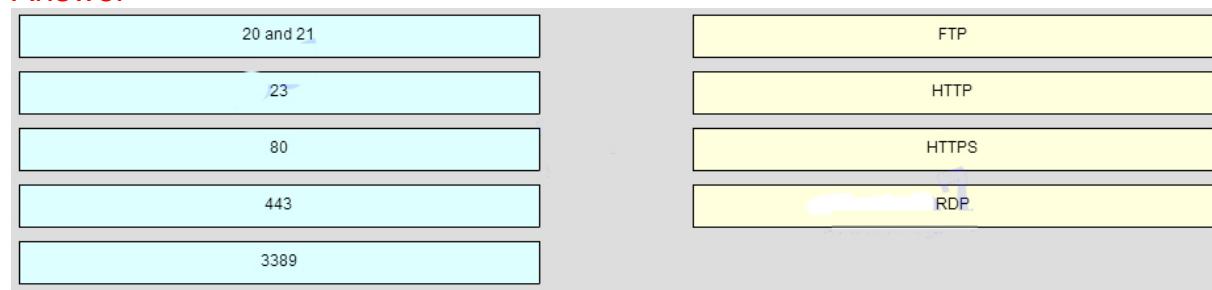


80. Match the port number or numbers to the protocol. (Not all options are used.)

Question



Answer



81. A technician is building a thick client workstation that would be used to run a database and wants to ensure the best protection against errors. What type of memory would be best suited for this?

- **ECC**
- RDRAM

- DDR3
- DDR2

Explanation: RDRAM, DDR2, and DDR3 RAM do not offer any error correction abilities for data within the memory module. ECC RAM allows for the detection of multiple bit errors and correction of single bit errors within the memory modules.

82. Which two motherboard components connect to the Northbridge chipset? (Choose two.)

- NIC
- USB 2.0 devices
- USB 3.0 devices
- FireWire devices
- **RAM**
- **video card**

Explanation: The Northbridge chipset allows the fastest components to interface with the CPU at the front side bus speed, namely the RAM and video card. All other components like the USB, FireWire, and the expansion buses communicate with the CPU via the Southbridge chipset.

83. Which two motherboard components are directly managed by the Southbridge chipset? (Choose two.)

- RAM
- CPU
- video card
- **USB 3.0 devices**
- **FireWire devices**

Explanation: The Northbridge chipset allows the fastest components such as the RAM and the video card to interface with the CPU at the front side bus speed. All other components such as the USB and FireWire ports, and the expansion slots communicate with the CPU via the Southbridge chipset.

84. Which RAID level allows for extension of a dynamic volume without any redundancy?

- **0**
- 1
- 2
- 3
- 4
- 5

Explanation: A RAID array 0 allows for striping over a variety of disks without providing for any redundancy. This allows for faster read and write functions because they are spread over multiple drives and thus adds the benefit of the simultaneous use of multiple actuator arms of the various hard drives.

85. Which adapter would a technician install in a desktop computer to enable a video signal to be recorded from a video recorder to the computer hard drive?

- video adapter
- TV tuner card
- **video capture card**
- network interface card

Explanation: A video capture card enables video to be saved as a file on the computer hard drive from a video recorder. A TV tuner card enables television signals to be received and viewed by the computer. A video adapter enables the computer to display computer output on a screen. A network interface card enables the computer to connect to a data network.

86. Which connector would be used for a laptop external hard drive?

- DVI
- **eSATA**
- PATA
- SATA
- S/PDIF

87. A user wants to purchase a monitor that will be light, consume the least amount of power, and provide deep dark levels in the display. Which display type would best meet these requirements?

- plasma
- LCD
- LED
- **OLED**

Explanation: For monitors of the same Plasma monitors consume the highest amount of power followed by LCD monitors and than LED monitors. Of the different types of LED monitors, OLED monitors will offer the deeper dark levels in the display.

88. Which resolution would provide the best visual quality on a plasma monitor?

- **native**
- XGA
- VGA
- SVGA

Explanation: Native resolution will provide the optimal resolution supported by the monitor.

89. Match the port number or numbers to the protocol. (Not all options

are used.)



90. A network administrator is setting up the wireless network in a small office. The administrator wants to choose a wireless protocol standard that takes advantage of 5 GHz throughput but is also compatible with a few existing devices that operate at 2.4 GHz. Which wireless standard should the administrator deploy?

- 802.11ac
- **802.11n**
- 802.11a
- 802.11b
- 802.11g

Explanation: 802.11n operates at both 2.4 GHz and 5 GHz and is backward compatible with 802.11b and 802.11g. 802.11b and 802.11g operate at 2.4 GHz only. 802.11a and 802.11ac operate at 5 GHz only.

91. A network administrator is setting up a device for two objectives. The first objective is to store frequently visited web content on the device so that the local users can access the content quickly. Another objective is to achieve a certain level of network security by hiding the internal IP addresses. Which device should the administrator set up?

- web server
- **proxy server**
- authentication server
- firewall

Explanation: A proxy server has the authority to act as another computer. A popular use for a proxy server is to act as storage or cache for web pages that are frequently accessed by devices on the internal network. In addition, a proxy server can effectively hide the IP addresses of internal hosts because all requests going out to the internet are sourced from the IP address of the proxy server.

92. A small company is setting up a web server to promote products on the internet. The company network administrator is searching for an online service that can provide the domain name and name resolution services. Which type of online service can provide such functions to the company?

- DHCP service
- **DNS service**
- proxy service
- web service

Explanation: An online DNS service can provide domain name registration and name resolution for the registered domain services. This service eliminates the need for setting up a fully functional DNS server in the small company.

93. When a wireless network in a small office is being set up, which type of IP addressing is typically used on the networked devices?

- **private**
- network
- public
- wireless

Explanation: In setting up the wireless network in a small office, it is a best practice to use private IP addressing because of the flexibility and easy management it offers.

94. A company is deploying a wireless network in the distribution facility in a Boston suburb. The warehouse is quite large and it requires multiple access points to be used. Because some of the company devices still operate at 2.4GHz, the network administrator decides to deploy the 802.11g standard. Which channel assignments on the multiple access points will make sure that the wireless channels are not overlapping?

- channels 1, 5, and 9
- channels 2, 6, and 10
- **channels 1, 6, and 11**
- channels 1, 7, and 13

Explanation: In the North America domain, 11 channels are allowed for 2.4GHz wireless networking. Among these 11 channels, the combination of channels 1, 6, and 11 are the only non-overlapping channel combination.

95. A support desk technician is asking a customer a series of questions about a problem connecting to the network. Which step of the troubleshooting process is the technician applying?

- Establish a plan of action to resolve the problem.

- Test the theory to determine cause.
- Establish a theory of probable cause.
- **Identify the problem.**

Explanation: Before any solutions can be proposed or tested, the problem must first be identified. This is done by gathering information from the customer by asking questions and clarifying details of the problem.

96. A new computer workstation has been installed in a small office. The user of the workstation can print a document using a network printer on the LAN, but cannot access the Internet. What is a possible cause of the problem?

- The TCP/IP stack is not functional.
- The DHCP server IP address is misconfigured.
- **The gateway IP address is misconfigured.**
- The workstation is configured with a static IP address.

Explanation: The fact that the workstation can print at a networked printer indicates that the TCP/IP stack is functional. However, that the workstation cannot communicate with external networks indicates that the most likely problem is the incorrect default gateway address. If the workstation is configured to obtain an IP address automatically, the DHCP server address does not need to be configured.

97. What is a result when the DHCP servers are not operational in a network?

- Workstations are assigned with the IP address 0.0.0.0.
- Workstations are assigned with the IP address 127.0.0.1.
- **Workstations are assigned with IP addresses in the 169.254.0.0/16 network.**
- Workstations are assigned with IP addresses in the 10.0.0.0/8 network.

Explanation: When workstations are configured with obtaining IP address automatically but DHCP servers are not available to respond to the requests, a workstation can assign itself an IP addresses from the 169.254.0.0/16 network.

98. A user complains to a technician that none of the apps that use a GPS are working properly. What should the technician do first if the GPS function is suspect?

- Calibrate the gyroscope.
- Replace the GPS antenna.
- **Ensure the Location setting is enabled.**
- Replace the gyroscope.

Explanation: A global positioning system (GPS) is used for geographic location, navigation, and specialized search results. Both iOS and Android devices have a Location or Location services setting to control whether the GPS is turned on. The WiFi/GPS antenna may need to be replaced if the location service is turned on but GPS still does not work.

99. A teenager has asked the grandparents for a specific type of mobile technology. The grandparents do not remember the specific name of the device, but remember that the teenager wants to receive a cell phone call on it. Which technology is likely to be the one the teenager wants?

- GPS
- e-reader
- **smart watch**
- VR headset

Explanation: A smart watch commonly has many of the same functions of a smart phone such as receiving/placing calls, playing online games, and using applications such as a calculator or geolocator.

100. A teenager is using a remote control unit to control a TV set. Which wireless technology is most likely being used?

- Bluetooth
- **IR**
- NFC
- hotspot

Explanation: Infrared (IR) is a wireless connection technology. It can be used to control other IR-enabled devices remotely, such as a TV, set-top box, or audio equipment.

101. A sales representative returns to the office and connects the laptop to an external display device. The display device is powered on, but the laptop image is not showing on the display device. What are two things that should be checked? (Choose two.)

- The screen refresh rate is set correctly.
- **The laptop is sending the video signal to the external device.**
- **The video cable is firmly connected.**
- The laptop is not in sleep mode.
- The LCD backlight is properly adjusted.

Explanation: For an external display device to display a laptop screen, the video cable should be connected firmly on both ends. In addition, the laptop needs to send the video signal to the display device.

102. Which mode would be best suited for a laptop that is displaying oversized images and icons?

- SVGA
- VGA
- XGA
- **native**

Explanation: Native resolution will provide the optimal resolution supported by the display on a laptop.

103. A user complains that the laptop display is flickering. Which two problems could cause this situation? (Choose two.)

- The track pad is dirty.
- Power to the pixels has been cutoff.

- **The inverter is damaged or malfunctioning.**
- **The screen refresh rate is set incorrectly.**
- The LCD backlight is not properly adjusted.

Explanation: The problem of a flickering laptop display is most likely caused by the image not refreshing fast enough or by a malfunctioning/damaged inverter.

104. There is a shared laptop in the conference room of a company. One day an employee turns on the laptop to prepare for joining a videoconference. However, the image on the laptop display is pixilated. What should the user do first to correct the problem?

- Adjust the screen refresh rate.
- **Set the display to native resolution.**
- Set the display to the lowest resolution.
- Calibrate the LCD backlight.

Explanation: The native resolution would provide the best image display. In this scenario, the user should try the native resolution first and then adjust to other resolution options if needed.

105. A technician is called to work on a laser printer that prints vertical lines on every printed page. Which laser printer part should be checked first?

- wiper blade
- RAM
- **toner cartridge**
- pickup rollers

Explanation: A vertical line could be a sign of a faulty drum or a problem with the toner cartridge. The toner cartridge is the easiest one to test if it is faulty and can be reused later if it turns out to not be the problem.

106. A technician is called to troubleshoot a problem where a user claims that none of the print jobs from this morning have printed. The technician sees that there is only one printer installed in the device list and it is a network printer shared with other users. What should the technician check?

- the fuser assembly
- the IP address of the printer
- the user rights to the printer
- **the print queue**

Explanation: A networked printer might have a backed up print queue caused by the printer being offline, out of paper, or a paper jam. There might also be a document stuck in the print queue causing all of the others after it to not print. Check the printer for any issues first then check the print queue and see if sending a different document to the top of the queue or canceling the document at the top of the queue frees up the printer.

107. What are two functions of hypervisors? (Choose two.)

- **to allocate physical system resources to virtual machines**

- **to manage virtual machines**
- to partition the hard drive to run virtual machines
- to share the antivirus software across the virtual machines
- to protect the host from malware infection from the virtual machines

Explanation: The hypervisor does not protect the hosting OS from malware. Neither does it allow sharing software across virtual machines. The hard drive of the supporting computer does not need to be partitioned to run virtual machines. The hypervisor creates and manages virtual machines on a host computer and allocates physical system resources to them.

108. A computer technician creates a virtual environment. Which security measure should the technician take for the virtual machine running Windows 10, if any?

- **Each virtual machine should have antivirus software installed.**
- A hardware firewall should be placed between each virtual machine and the internet or it will be necessary to ensure that the Windows firewall is enabled on each virtual machine.
- The virtual machine must use the same secure passwords as the host computer uses.
- Because each virtual machine contains an operating system that is different from what is on the host computer, no security software is needed.

Explanation: Virtual machines are susceptible to the same security threats that a host computer is. All security measures that are recommended for a computer in a home or business environment should also be taken within the virtual environment.

109. Which two minimum requirements should be met for a technician to enable Hyper-V on a Windows 10 computer? (Choose two.)

- 16 GB RAM
- 32- or 64-bit operating system
- **64-bit operating system**
- 32-bit operating system
- 8 GB RAM
- **4 GB RAM**

Explanation: Windows Hyper-V in Windows 10 has the following minimum requirements:

- 64-bit operating system
- BIOS virtualization support and hardware enforced data execution prevention
- 4 GB RAM
- Windows 10 Enterprise, Pro, or Education editions
- CPU support for VM Monitor Mode Extension (VT-c on Intel CPUs)

110. A technician is setting up a new VM. How will internet connectivity be provided to the VM?

- through an IPsec tunnel

- through a virtual NIC that connects through the host computer NIC
- through a virtual private network
- through port forwarding configuration on the firewall of the operating system used within the VM

Explanation: In creating a virtualized environment, the hypervisor creates a virtual NIC that works with the host physical NIC. It virtualizes the network resource to be shared with all VM virtual NICs in providing network connectivity.

111. Which component would be required when deploying a virtual desktop to a corporate user?

- minimum of 6 GB of RAM
- **virtual NIC**
- metered service
- SSD

Explanation: A virtual desktop is one where the desktop and all applications are run from a server. A virtual desktop uses a virtual NIC.

112. What would a technician require in order to install a hypervisor on a client machine?

- **virtualization software**
- multiple storage drives
- a server housed by a cloud service provider
- an SSD

Explanation: A hypervisor is used to create a virtual machine (VM). The hypervisor can be part of an operating system such as Windows Hyper-V or it can be downloaded from a virtualization vendor such as VMWare or Oracle.

113. Which character of the Cloud model provides easy monitoring, controlling, reporting, and billing for both the provider and customers?

- rapid elasticity
- broad network access
- on-demand self-service
- resource pooling
- **measured service**

Explanation: With measured service of the Cloud model, the resource usage can be easily monitored, controlled, reported, and billed to provide full visibility to both the Cloud service provider and customers.

114. A company uses cloud services and is setting up a new switch supplied by the cloud provider. Which cloud model is used by the company?

- SaaS
- DaaS
- **IaaS**
- PaaS

Explanation: Whenever a company has an infrastructure device like a router or switch in the company cloud solution, the cloud model being used is IaaS.

115. A company owns servers for a particular corporate application. The servers are housed in an external data center. The company has an agreement with a cloud provider to spin up additional servers for the same application during peak usage. Which cloud model is the company using?

- community
- **hybrid**
- private
- public

Explanation: A private cloud is a cloud-based service where the company manages the devices or applications within the cloud. They are just located away from the business at a provider site. If a company is using a public cloud, a provider manages the devices or the applications or both for the company. A hybrid cloud is a combination of two types of clouds, and a common practice is a private and public cloud combination.

116. A company has a few employees that are designers. The designers do not have the CAD application loaded on their local computer. Instead, the designers use a CAD application hosted by the application developer. Which type of virtualization is the company using?

- IaaS
- DaaS
- PaaS
- **SaaS**

Explanation: Software as a Service (SaaS) is a cloud computing type that provides access to one or more applications through a server. This server is not owned or managed by the company using the application.

117. A professor is searching through a large box of unused cables and connectors in the classroom. As a test, the professor hands a ribbon cable to a student. The cable has 3, 40-pin connectors. The professor tells the student the cable connects to the motherboard and internal drives. What type of cable is the student holding?

- fiber optic cable
- **IDE cable**
- HDMI cable
- serial cable

118. After continuous morning use, a computer suddenly reboots without the intervention of the user. What are the two most likely hardware parts that could cause this problem? (Choose two.)

- hard drive
- **CPU**
- RAID
- display port or display
- **power supply**
- surge strip

119. A user needs to connect to Cisco.com but does not know the IP address for this website. What type of server will translate the website name into an IP address?

- DHCP
- **DNS server**
- FTP server
- print server

120. A technician is searching through a storage locker and finds a cloud-based network controller. What is the purpose of this device?

- **It is a device that allows a network administrator to manage many remote networking devices from a central location.**
- It connects networks and forwards traffic to remote networks by using IP addressing information.
- It is placed between two or more networks and protects data and equipment from unauthorized access.
- It uses radio waves to provide network access to wireless devices.

121. A school is installing a new shared printer but the printer is not showing up on the list of available printers. What should the technician do to resolve the issue?

- Reset the page counter.
- Connect the printer using wireless.
- Check the vibration of the crystals.
- Install a USB hub.
- **Manually add the printer IP address.**

122. A receptionist is complaining about the following printer issue: The print queue seems to be functioning properly, but the printer does not print. What are two possible causes of this issue? (Choose two.)

- The print queue is overloaded.
- The printer does not have enough RAM.
- **There is a bad cable connection.**
- A test page was never printed.
- The wrong printer type has been selected.
- **The printer has an error such as out of paper, out of toner, or paper jam.**

123. When a co-worker steps into another office, the co-worker notices that the computer is making a loud clicking noise and asks about it. The technician is contacted to investigate. Which device should the technician check first?

- monitor
- **hard drive**
- CPU fan
- CPU

Explanation: If a hard drive makes repeated clicking or tapping sounds when the computer is idle, the hard drive is failing. Make a backup and replace the drive as soon as possible. Invalid boot disk errors and files that suddenly will not open are symptoms of hard drive issues.

124. A user reports that a drive is no longer there. The technician asks the user to demonstrate the problem. Within the application, the user demonstrates that the drive, that was present in the save options yesterday, is now no longer an option. What should the technician do to see if the drive is recognized by the operating system?

- **Use Device Manager.**
- Check the Startup folder.
- Bring up a command prompt and type ipconfig.
- Swap the data cables of the mechanical drive and the SSD.

Case 2:

- Bring up a command prompt and type ipconfig.
- **Use the Disk Management Control Panel.**
- Swap the data cables of the mechanical drive and the SSD.
- Use the Msconfig utility.

Case 3:

- Open a web browser and type the following: <http://127.0.0.1>. Verify if both drives appear in the list.
- **Use File Explorer.**
- Remove the drive and attach it to the SATA port used by the SSD. Reboot the computer and see if the drive is recognized.
- Bring up a command prompt and type ipconfig.

125. A technician is working on a laptop and a key on the keyboard is not responding as it should. What is a possible solution for this situation?

- Ensure that Bluetooth is not activated.
- **Clean with compressed air.**
- Recharge the battery.
- Check the display settings.

126. An art appreciation college professor wants to apply for a technology grant to allow students to have a virtual tour of the Louvre Museum in Paris, France. Which mobile technology should the professor request to accomplish this goal?

- smart watch
- e-reader
- **VR headset**
- GPS

Explanation: A virtual reality (VR) headset can be used in a training situation for educational purposes such as touring a remote location, military training, or medical training. Gaming applications are also popular. A person wears a special headset that projects a slightly different image to each eye, allowing the image to be viewed in 3D. The person may also wear headphones and a microphone depending on the application.

127. In setting up a small office network, the network administrator decides to assign private IP addresses dynamically to workstations and mobile devices. Which feature must be enabled on the company router in order for office devices to access the internet?

- UPnP
- MAC filtering
- QoS
- **NAT**

Explanation: Network Address Translation (NAT) is the process used to convert private addresses to internet-routable addresses that allow office devices to access the internet.

128. A computer technician has successfully returned a laptop to full operation and verified system functionality. Actions the technician performed included modifying the registry and applying patches to the operating systems. What is the next step in the troubleshooting process that the technician should do?

- **Document the solution.**
- Consult manufacturer manuals and repair logs.
- Reboot the computer.
- Re-attach and test all peripherals.

Explanation: The technician is ready to conclude the troubleshooting process by documenting the solution. The manufacturer manuals and repair logs would be consulted to establish a plan of action and resolve the problem before the solution has been applied. Rebooting the computer, and re-attaching and testing all peripherals, would occur during the testing and verification stage after the solution has been implemented.

129. A user complains that the image on a laptop looks dull and pale. What is the most likely cause of the problem?

- **The LCD backlight is not properly adjusted.**
- The display properties are set incorrectly.
- The screen refresh rate is set incorrectly.
- The inverter is damaged or malfunctioning.

Explanation: The problem of a laptop screen that looks dull and pale is most likely caused by an improper LCD backlight setting.

130. A user reports that a computer is unable to print on an inkjet printer. The technician has determined that there is no paper in the paper bin. What is the next step in the troubleshooting process?

- Determine the exact cause.
- Document the findings.
- Verify system functionality.
- **Establish a plan of action.**

Explanation: What the technician just did was to determine the exact cause. What is next in the troubleshooting process is to establish a plan of action.

131. A user reports that a “Document failed to print” message appears every time the network printer is restarted. What could be a cause of the problem?

- The fuser is faulty.
- **The IP address assigned to the printer is a duplicate IP address.**

- The IP address on the printer is statically assigned.
- The user rights to the printer have been configured incorrectly.

Explanation: Networked printers are commonly assigned a static IP address. A DHCP reservation can be made and the MAC address of the printer can be entered at the DHCP server so that the printer receives the same IP address each time, or a technician can just manually enter an IP address into the printer. Each device must have a unique IP address, and a duplicate one would cause a network printer to not function.

132. A computer technician is asked to configure a workstation with two virtual machines. What would be the purpose of the configuration?

- to allow multiple applications, that require more RAM than is installed, to be active simultaneously
- to increase the performance of the computer
- **to have two separate operating systems running at the same time on one computer**
- to have redundancy in case of hard drive failure

Explanation: In the process of virtualization, virtual machines are created. Different operating systems can be installed on each virtual machine without interfering with one another.

133. What is meant by a cloud service being metered?

- The company is allowed unlimited access to a service during specific periods of time.
- The company is charged a monthly or annual fee for a specific service.
- **The company is charged based on the amount of service used.**
- A special device is attached to the demarcation point where the service provider network ends and the company network starts.

Explanation: An unmetered cloud service is one where the service is free or it is charged on a monthly or annual basis. A metered cloud service has the charge based on how much the service is used. A company can also have an unmetered service up to a particular point and then the company is assessed additional charges based on how much additional services the company used.

134. A company is setting up one new laser printer on every floor. What type of server will store the print jobs in a queue and then spool them to the device when it is ready?

- FTP server
- DHCP
- **print server**
- DNS server

135. A technician is searching through a storage locker and finds a router. What is the purpose of this device?

- It uses radio waves to provide network access to wireless devices.
- **It connects networks and forwards traffic to remote networks by using IP addressing information.**

- It is placed between two or more networks and protects data and equipment from unauthorized access.
- It is an all-in-one security appliance that includes IDS/IPS functionality as well as stateful firewall services.

136. An office assistant in a law firm is trying to print many large legal documents but is getting “memory overload” error messages from the printer. What should the technician do to resolve the issue?

- Connect the printer using wireless.
- Update the OS.
- Replace the pickup roller.
- Update the BIOS.
- **Add more memory to the printer.**

137. Which statement is correct about applying firmware updates?

- The firmware updates can be installed automatically using the Windows Service Pack utility.
- Firmware updates should not be included as part of the preventive maintenance program.
- **Firmware updates are sometimes irreversible.**
- It is possible to use the Roll Back feature to reverse the change.

Explanation: Firmware updates can make the hardware unusable if not performed correctly. Sometimes it is not possible to revert to the original firmware once the update has been performed because of how the changes are applied to the EPROM technology.

138. What are two possible causes of a computer running slowly? (Choose two.)

- **Not enough RAM is installed in the system.**
- **The computer is overheating.**
- The hard drive has been partitioned.
- The RAM is not compatible with the motherboard.
- The CPU has been overclocked.

Explanation: Not having enough RAM or the computer overheating can cause a computer to run slowly. An overclocked CPU would tend to speed up the computer. If the RAM is not compatible with the motherboard, the computer would not start up. Partitioning a hard drive does not cause the computer to run more slowly.

139. A Mac user wants to connect an iMac as a display for a MacBook Pro. What type of cable would provide a high-speed (up to 20 Gbps) direct connection of the two devices?

- Lightning cable
- Video Graphics Array (VGA)
- **Thunderbolt cable**
- telephone cable

140. A technician has been called in to investigate a problem with the computer rebooting randomly throughout the day. What two pieces of hardware could cause this problem? (Choose two.)

- **CPU**
- BIOS
- RAID
- surge strip
- wireless NIC
- **power supply**

141. A technician is setting up a server that requires two connections between the client and the server, one for commands and replies, the other for the actual transfer of files. What type of server will accomplish this task?

- print server
- DNS server
- **FTP server**
- web server

142. All documents printed by the laser printer in the branch office have ghost or shadow images appearing on the paper. What should the technician do to resolve the issue?

- Update the OS.
- Update the BIOS.
- Connect the printer using wireless.
- **Replace the drum.**
- Configure the printer for duplex printing.

143. While working in a computer training room, the technician notices that one computer emits a loud clicking noise. Which device should the technician check first?

- monitor
- internal speaker
- optical drive
- **hard drive**

Explanation: If a hard drive makes repeated clicking or tapping sounds when the computer is idle, the hard drive is failing. Make a backup and replace the drive as soon as possible. Invalid boot disk errors and files that suddenly will not open are symptoms of hard drive issues.

145. A technician is working on a laptop and GPS is not functioning. What is a possible solution for this situation?

- Check the display settings.
- Check the fan on the GPU.
- **Verify that airplane mode is not activated.**
- Recharge the battery.

Case 2:

- **Verify the status of service.**
- Ensure that only one app is open at a time.
- Recharge the battery.
- Check the display settings.

146. A reporter is trying to print several high resolution photographs but the color laser printer is going extremely slowly. What should the technician do to resolve the issue?

- **Add more RAM to the printer.**
- Connect the printer using wireless.
- Replace the pickup roller.
- Update the OS.
- Update the BIOS.

147. A technician is setting up an environment where popular and frequently accessed web pages are stored locally on the internal network. What type of server will accomplish this task?

- print server
- DHCP
- **proxy server**
- DNS server

148. A manager is complaining about the following printer issue: The printer is printing incorrect colors. What are two possible causes of this issue? (Choose two.)

- **An incorrect cartridge could be installed.**
- **The print heads might need to be cleaned and calibrated.**
- The printer lid has not been closed securely.
- The printer is using the wrong cable.
- The print queue is overloaded.

149. A user wants to connect a laptop to a high definition TV. What type of cable would provide both audio and video signals?

- **HDMI cable**
- coaxial cable
- fiber optic cable
- Video Graphics Array (VGA)

150. A technician has been asked to decide which laptop components should be cleaned on a monthly basis as part of a maintenance routine. What are two examples of components that should be included? (Choose two.)

- **exterior case**
- **keyboard**
- CPU
- optical drive
- RAM

Explanation: Routine preventive maintenance includes the cleaning of parts that can get dirty with everyday use. Internal components are not required to be cleaned as often as external parts. Nonabrasive cleaners should be used to ensure that no damage is caused to laptop components.

151. Which type of storage would be best in a laptop computer that belongs to a small child?

- PATA

- eSATA
- SATA
- **SSD**

Explanation: Laptop computers require a fast, light, power-efficient form of storage device.

152. A network administrator in a corporate headquarters office is setting up a new laptop for a new employee. What type of service will provide an IP address for the new device?

- FTP server
- **DHCP**
- print server
- web server
- Navigation Bar

153. While a user is working on a spreadsheet, the computer reboots. What are two components that could cause this issue? (Choose two.)

- wireless NIC
- ROM
- BIOS
- **CPU**
- RAID
- **power supply**

154. A network administrator is searching through a large box of unused cables and connectors. The administrator pulls out a cable that has connectors with 3 rows and 15 pins and is used for connecting analog video. What type of cable is the administrator looking at?

- **Video Graphics Array (VGA)**
- HDMI cable
- coaxial cable
- fiber optic cable

155. What characteristic best describes a touch screen?

- **an input device that recognizes touch and pressure as instructions**
- an output device used to present information from a laptop onto a screen
- an output device that uses LED, LCD, or OLED technology
- a head-mounted device that provides head-motion and eye-tracking sensors and displays three-dimensional images

156. What characteristic best describes a projector?

- **an output device used to present information from a laptop onto a screen**
- an output device that uses LED, LCD, or OLED technology
- a head-mounted device that provides head-motion and eye-tracking sensors and displays three-dimensional images
- an input device often used to provide secure access to locations or devices by using voice, facial, or fingerprint recognition

157. What characteristic best describes an AR headset?

- **a head-mounted device that superimposes images and audio over a real world image and can provide users immediate access to information about their real surroundings**
- an input device that digitizes an image by placing the document on a flat glass surface and scanning from underneath
- an input device for playing games and flight simulation applications
- a device that allows the use of one set of keyboard, mouse, and monitor to control multiple computers

158. What characteristic best describes a signature pad?

- **an input device that provides verification of package delivery by digitizing a written name**
- an input device that digitizes an image by placing the document on a flat glass surface and scanning from underneath
- an input device for playing games and flight simulation applications
- a device that allows the use of one set of keyboard, mouse, and monitor to control multiple computers

159. What characteristic best describes a magstripe reader?

- **an input device that reads encoded information from the back of plastic cards**
- an input device that digitizes an image by placing the document on a flat glass surface and scanning from underneath
- an input device for playing games and flight simulation applications
- a device that allows the use of one set of keyboard, mouse, and monitor to control multiple computers

160. What characteristic best describes a barcode scanner?

- **an input device that reads barcodes affixed to most retail products**
- an input device that digitizes an image by placing the document on a flat glass surface and scanning from underneath
- an input device for playing games and flight simulation applications
- a device that allows the use of one set of keyboard, mouse, and monitor to control multiple computers

161. What characteristic best describes a keyboard?

- **the first type of input device used for creating documents and emails**
- an input device for playing games and flight simulation applications
- a device that allows the use of one set of keyboard, mouse, and monitor to control multiple computers
- an input device that recognizes touch and pressure as instructions

162. What characteristic best describes an NFC device?

- **an input device allowing users to pay for a product by tapping their credit card or smartphone on another device**
- an input device that reads barcodes affixed to most retail products
- an input device that reads encoded information from the back of plastic cards

- a pen-like tool that allows input by touching the surface of the screen

163. What characteristic best describes a mouse?

- **the first type of input device used to navigate the graphical user interface**
- an input device allowing users to pay for a product by tapping their credit card or smartphone on another device
- an input device that reads barcodes affixed to most retail products
- an input device that reads encoded information from the back of plastic cards

164. A university is upgrading the backbone network that connects all of the buildings on campus together. What type of cabling would be recommended in this situation?

- **fiber optic cable**
- internal SCSI cable
- Ethernet Category 5e cable
- Video Graphics Array (VGA)

165. A student is searching through a large box of unused cables and connectors in the classroom. The student finds a ribbon with connectors with 50 pins arranged in 2 rows. The student learns that cable connects to the motherboard and internal drives. What type of cable is the student holding?

- **internal SCSI cable**
- HDMI cable
- coaxial cable
- fiber optic cable

166. A manager has requested a higher capacity external hard drive for local backups of the company laptop. What type of cable could network support use to connect the external hard drive?

- **USB cable**
- Video Graphics Array (VGA)
- telephone cable
- HDMI cable

167. For two days in a row, a user has noticed that the computer reboots several times before it eventually starts. What are two suspect components? (Choose two.)

- **CPU**
- **power supply**
- BIOS
- motherboard
- ROM
- wireless NIC

168. A network analyst is setting up a server that uses a store-and-forward method of sending, storing, and retrieving electronic messages across a network. What type of server is the analyst setting up?

- **email server**

- FTP server
- print server
- web server

169. A manager works remotely and needs to access classified information on the web servers within the company head office. What type of server uses the secure HTTP (HTTPS) for exchanging text, graphic images, sound, and video on the web?

- **web server**
- print server
- DNS server
- FTP server

170. An administrator is setting up a framework to support access control on a network device. What type of server is able to control those who are permitted to access a network and track what actions they perform while accessing the network?

- **authentication server**
- DHCP
- DNS server
- print server

171. What network service controls those who are permitted to access a network, what they can do while they are there, and track what actions they perform while accessing the network?

- **AAA**
- DHCP
- DNS server
- print server

172. A technician is searching through a storage locker and finds an access point. What is the purpose of this device?

- **It uses radio waves to provide network access to wireless devices.**
- It is an all-in-one security appliance that includes IDS/IPS functionality as well as stateful firewall services.
- It is placed between two or more networks and protects data and equipment from unauthorized access.
- It connects networks and forwards traffic to remote networks by using IP addressing information.

173. A technician is searching through a storage locker and finds a firewall. What is the purpose of this device?

- **It is placed between two or more networks and protects data and equipment from unauthorized access.**
- It is an all-in-one security appliance that includes IDS/IPS functionality as well as stateful firewall services.
- It connects multiple end devices and can be configured for VLANs and port security.
- It is a device whose sole purpose is to connect end devices and to microsegment a LAN.

174. A technician is searching through a storage locker and finds an Ethernet NIC. What is the purpose of this device?

- **It is needed to connect a computer to a wired local-area network.**
- It uses radio waves to provide network access to wireless devices.
- It is a device whose sole purpose is to connect end devices and to microsegment a LAN.
- It connects networks and forwards traffic to remote networks by using IP addressing information.

175. A technician is searching through a storage locker and finds a Cisco ASA 5505-X (UTM). What is the purpose of this device?

- **It is an all-in-one security appliance that includes IDS/IPS functionality as well as stateful firewall services.**
- It is a device whose sole purpose is to connect end devices and to microsegment a LAN.
- It connects multiple end devices and can be configured for VLANs and port security.
- It uses radio waves to provide network access to wireless devices.

176. A technician is searching through a storage locker and finds a wireless NIC. What is the purpose of this device?

- **It is needed to connect a computer or smart device to an 802.11 network.**
- It uses radio waves to provide network access to wireless devices.
- It is a device whose sole purpose is to connect end devices and to microsegment a LAN.
- It connects networks and forwards traffic to remote networks by using IP addressing information.

177. A technician is searching through a storage locker and finds a repeater. What is the purpose of this device?

- **It is used to regenerate weak signals to extend the distance a signal can travel.**
- It uses radio waves to provide network access to wireless devices.
- It is a device whose sole purpose is to connect end devices and to microsegment a LAN.
- It connects networks and forwards traffic to remote networks by using IP addressing information.

178. A technician is searching through a storage locker and finds a patch panel. What is the purpose of this device?

- **It provides a wired or wireless connection between end devices, switches, and routers and in some cases, can regenerate weak signals.**
- It is a device whose sole purpose is to connect end devices and to microsegment a LAN.
- It connects multiple end devices and can be configured for VLANs and port security.
- It uses radio waves to provide network access to wireless devices.

179. A technician is searching through a storage locker and finds a hub.

What is the purpose of this device?

- **It is a legacy device that connects end devices and where traffic from one connected device floods out to every other connected device.**
- It uses radio waves to provide network access to wireless devices.
- It is a device whose sole purpose is to connect end devices and to microsegment a LAN.
- It connects networks and forwards traffic to remote networks by using IP addressing information.

180. Users have noticed that the colors on their printed documents are different from the colors that they see on their computer screens. What should the technician do to resolve the issue?

- **Calibrate the printer.**
- Install a USB hub.
- Check the vibration of the crystals.
- Connect the printer using wireless.
- Reset the page counter.

181. A technician has just completed a preventive maintenance on the department printer. Users are now complaining that the printer is no longer available. What should the technician do to resolve the issue?

- **Check that the printer is plugged into a power source.**
- Install a USB hub.
- Check the vibration of the crystals.
- Connect the printer using wireless.
- Reset the page counter.

182. Students who use the same printer are complaining that recently printed documents contain unknown characters. What should the technician do to resolve the issue?

- **Re-install the printer driver.**
- Power cycle the printer.
- Check the vibration of the crystals.
- Install a USB hub.
- Reset the page counter.

183. A photographer is complaining about the following printer issue: The printer issues a “Document failed to print” message. What are two possible causes of this issue? (Choose two.)

- **A cable is loose or disconnected.**
- **The printer is no longer shared.**
- The paper tray is flimsy.
- The print queue is overloaded.
- The printer lid has not been closed securely.

184. A reporter is complaining about the following printer issue: The paper jams when the printer is printing. What are two possible causes of this issue? (Choose two.)

- **The printer could be dirty.**

- **The humidity could be high and that causes the paper to stick together.**
- The laser printer is emitting too much radiation.
- The printer does not have enough RAM.
- The print queue is overloaded.

185. A technician is complaining about the following printer issue: The print appears faded on the paper. What are two possible causes of this issue? (Choose two.)

- **The toner cartridge is low.**
- **The paper might be incompatible with the printer.**
- The wrong printer type has been selected.
- The printer does not have enough RAM.
- The print queue is overloaded.

186. A librarian is complaining about the following printer issue: The printer control panel displays no image. What are two possible causes of this issue? (Choose two.)

- **The contrast of the screen may be set too low.**
- **The printer is not turned on.**
- The room temperature is above normal.
- The print queue is overloaded.
- The printer lid has not been closed securely.

187. A teacher is complaining about the following printer issue: The paper is creased after printing. What are two possible causes of this issue? (Choose two.)

- **The paper-feed tray might not be firmly adjusted against the edges of the printer.**
- **The paper might be loaded incorrectly.**
- Print jobs are being sent to the wrong printer.
- The wrong printer type has been selected.
- The laser printer is emitting too much radiation.

188. A photographer is complaining about the following printer issue: The paper is not being fed into the printer. What are two possible causes of this issue? (Choose two.)

- **The paper may be wrinkled.**
- **The printer could be set to print to a different paper size than is currently loaded.**
- The paper tray is flimsy.
- A test page was never printed.
- The wrong printer type has been selected.

189. A reporter is complaining about the following printer issue: The printer is printing unknown characters. What are two possible causes of this issue? (Choose two.)

- **The wrong or an outdated printer driver is installed.**
- **The printer has a loose connection.**
- The laser printer is emitting too much radiation.
- A test page was never printed.

- The wrong printer type has been selected.

190. While a technician is installing a printer, the technician hears a loud clicking noise. Which device should the technician check first?

- **hard drive**
- RAM
- optical drive
- monitor

Explanation: If a hard drive makes repeated clicking or tapping sounds when the computer is idle, the hard drive is failing. Make a backup and replace the drive as soon as possible. Invalid boot disk errors and files that suddenly will not open are symptoms of hard drive issues.

191. Every time a user turns on the computer in the morning, the user hears a loud clicking noise. Which device should the technician check first?

- **hard drive**
- optical drive
- CPU fan
- CPU

Explanation: If a hard drive makes repeated clicking or tapping sounds when the computer is idle, the hard drive is failing. Make a backup and replace the drive as soon as possible. Invalid boot disk errors and files that suddenly will not open are symptoms of hard drive issues.

192. When a user turns on a workstation, the screen displays an “Invalid Boot Disk” error. The user calls the help desk. Which device should the technician check first?

- **hard drive**
- power supply
- CPU fan
- CPU

Explanation: If a hard drive makes repeated clicking or tapping sounds when the computer is idle, the hard drive is failing. Make a backup and replace the drive as soon as possible. Invalid boot disk errors and files that suddenly will not open are symptoms of hard drive issues.

193. A computer has two mechanical hard drives. The second drive (D:) is used for data storage. When trying to save an email attachment to the local hard drive, the user notices that the D: drive is not an option. What should the technician do to see if the drive is recognized by the operating system?

- **Use File Explorer.**
- Bring up a command prompt and type ipconfig.
- Swap the data cables of the mechanical drive and the SSD.
- Remove the drive and attach it to the SATA port used by the SSD.
Reboot the computer and see if the drive is recognized.

194. A laptop has an NVMe drive (C:) and a mechanical hard drive (D:). When the user tries to save a spreadsheet to the D: drive, the user notices

that the D: drive is not there. What should the technician do to see if the drive is recognized by the operating system?

- **Use the Disk Management Control Panel.**
- Open a web browser and type the following: <http://127.0.0.1>. Verify if both drives appear in the list.
- Bring up a command prompt and type ipconfig.
- Determine if the hard drive service is set to start automatically.
- Swap the data cables of the mechanical drive and the SSD.

195. A computer has an SSD for the operating system and applications and uses another mechanical hard drive for data storage. The user reports that data can no longer be saved to the mechanical hard drive. What should the technician do to see if the drive is recognized by the operating system?

- **Use Device Manager.**
- Remove the drive and attach it to the SATA port used by the SSD. Reboot the computer and see if the drive is recognized.
- Open a web browser and type the following: <http://127.0.0.1>. Verify if both drives appear in the list.
- Bring up a command prompt and type ipconfig.

196. A technician is working on a laptop and an error message about decryption appears when opening an email. What is a possible solution for this situation?

- **Install an appropriate certificate.**
- Check the display settings.
- Check the fan on the GPU.
- Ensure that Wi-Fi is turned off.
- Check the screen refresh rate.
- Replace the digitizer.
- Update all security apps.

197. A Windows 10 computer has several printers configured in the Control Panel Devices and Printers window. Which printer will the computer choose to be the first option for printing?

- **the printer that is set as the default printer**
- the software-based printer that is used to create PDF files
- the software-based printer that is used to create XPS files
- a manual selection, which is always needed

Explanation: The Default Printer option is set globally and will be the first printer to print a job unless another printer is selected in a Per-Document manner. Software-based printers are just instances of different kinds of printers, but to be chosen to do the job, they will need to be selected as a default or Per-Document printer. Selecting a printer every time a printing job sends is not needed.

198. What problems can be resolved by implementing QoS and traffic engineering protocols in an enterprise VoIP network?

- **excessive latency and jitter**
- unexpected infrastructure disruptions

- excessive noise and interference
- the inability to transfer calls

Explanation: Deploying QoS (Quality of Service) and traffic engineering protocols on an enterprise network can resolve problems of excessive latency (data transmission delay) and jitter (excessive variation in delay). Unexpected infrastructure disruptions, excessive noise and interference, and the inability to transfer calls are IP telephony configuration or physical layer problems that the deployment of QoS and traffic engineering protocols cannot resolve.

199. Which two devices commonly make use of Power over Ethernet (PoE)? (Choose two.)

- **IP phones**
- **wireless access points**
- network printers
- network storage devices
- wireless speakers

Explanation: IP phones and wireless access points commonly use Power over Ethernet (PoE). Network printers and storage devices typically use externally connected power sources such as electrical outlets or USBs. Wireless speakers use a battery power source.

200. Which network device is used to ensure that each server, providing the same service on a network, is used as much as the others on that network?

- **load balancer**
- router
- client
- wireless access point

Explanation: Specifically, a load balancer is used to ensure that each server providing the same service on a network is used as much as the others on that network. A router routes data between different networks. Client is the term used to describe hosts (end devices) on a network that accesses servers. A wireless access point enables hosts to connect to a wireless network.

201. A technician is building a gaming computer with a PCIe16 graphics card. The graphics card requires 100 watts of power to run. How will this power be supplied?

- from the PCIe slot on the motherboard
- from the AGP slot on the motherboard
- **from the PCIe slot on the motherboard, together with a separate PCIe power connector from the power supply**
- from the PCIe power connector from the power supply

Explanation: PCIe can supply up to 25 watts of power to each slot. A graphics card can supply up to 75 watts. For potent graphics cards, an additional 75 watts can be supplied by a PCIe power connector from the power supply.

202. Match the Wi-Fi standard with the maximum supported speed.

802.11n	40 Mbps
802.11ad	802.11a
802.11ax	600 Mbps
802.11ac	802.11n
802.11a	7 Gbps
	802.11ad
	9.608 Gbps
	802.11ax
	6.933 Mbps
	802.11ac

203. Employees are complaining that they send print jobs to a newly installed printer but the print jobs never print. What should the technician do to resolve the issue?

- **The printer is connected to the wrong port. Modify the port.**
- Check the vibration of the crystals.
- Install a USB hub.
- Connect the printer using wireless.
- Reset the page counter.

IT Essentials v8.0 – A+ 220-1102 Certification Practice Exam Answers

1. A server administrator needs to set up a new server with disk fault tolerance technology. The administrator decides to deploy RAID 0+1 technology. What is the minimum number of disks needed to deploy the disk array setting?

- 2
- 3
- **4**
- 5
- 6

Explanation: RAID 0+1 combines data striping and data mirroring. The minimum number of disks required for data striping is 2 and the minimum number of disks (or disk sets) for data mirroring is 2 as well.

2. A user has detected that one of the virtual machines in a computer is infected with a virus. Which statement about the situation is likely to be true?

- **The host operating system is not necessarily infected with a virus.**
- The host machine operating system has a bug.
- All of the virtual machines running on the host are infected with a virus.
- The host machine antivirus program requires an update.

Explanation: The virtual machines work separately from the host operating systems, even though they use the same system resources. The weaknesses and vulnerabilities from one virtual machine are not spread to other virtual machines or the host operating system.

3. Which fire protection system would be best for a university computer/electronics lab?

- an overhead sprinkler system
- an electronic ion spreader
- **a nonwater based fire extinguisher**
- fire suppressing hazmat blankets and suppressors

4. Why should a technician avoid opening the casing of a power supply?

- Power supplies must always be replaced, not repaired.
- **Hazardous levels of electricity may be present inside the power supply.**
- Power supplies are very fragile, expensive, and easy to damage.
- Only the power supply manufacturer can open the casing of a power supply.

Explanation: Power supplies contain high voltage, and only highly-trained technicians should attempt to repair them. A power supply can still hold dangerous levels of electricity even after being disconnected from the mains power.

5. What is the first step a technician should take when preparing to work on the inside of a computer?

- Remove the power supply.
- **Disconnect the computer from power.**
- Disconnect the computer from the network.
- Remove external devices such as a mouse.

Explanation: Before any service inside a computer is performed, the PC should be turned off and disconnected from any source of power to reduce the risk of shock.

6. What tool can be used to find and attempt to fix file structural errors on a hard disk in Windows 7?

- Format
- Sfc
- Rd
- **Chkdsk**

Explanation: Chkdsk attempts to correct file structural errors. Format is used to prepare a storage device so that it may store data. System file checker (sfc) replaces corrupt operating system files. Remove directory (rd) is used to delete a directory from the file structure.

7. A customer asks for a solution to a printer problem that is beyond the knowledge level of the technician. What should the technician do?

- Try to fix the problem anyway.
- Tell the customer to call the printer manufacturer to fix the problem.
- **Gather as much information as possible and escalate the problem.**
- Ask the customer to call again when another technician can provide a solution to the problem.

Explanation: Trying to fix a problem that is beyond the knowledge level of the technician may create additional problems.

8. Which statement that is related to running 64-bit software is correct?

- 64-bit software requires a 64-bit processor but can run on a 32-bit operating system.
- **64-bit software requires a 64-bit processor and a 64-bit operating system.**
- 64-bit software can run on a 32-bit processor but requires a 64-bit operating system.
- 64-bit software can run on a 32-bit processor using a 32-bit operating system but the software performance will be slower.

Explanation: 32-bit software can run on a 64-bit processor running a 64-bit operating system. 64-bit software can only run on a 64-bit processor running a 64-bit operating system.

9. Which statement is correct about installing a 32-bit operating system on a x64 architecture?

- The OS will always make use of all the RAM available.
- **The OS will run correctly.**
- The OS can address more than 128 GB of memory.
- This combination will provide better security.

Explanation: A 32-bit operating system can run on a x64 architecture, but it will not be able to use more than 4 GB of the system memory. A 64-bit OS includes features that provide additional security.

10. What action should a technician take before upgrading computers from Vista to Windows 7?

- Run Vista Upgrade Analyzer.
- **Run Windows 7 Upgrade Advisor.**
- Uninstall all programs.
- Upgrade the video card.

Explanation: When an upgrade from Vista to Windows 7 is being planned, the first step is to download and run the Windows 7 Upgrade advisor. It is not necessary in that situation to uninstall all programs or to upgrade the video card, as the requirements are the same for the two operating systems.

11. What is a possible situation when it might be necessary to boot Windows 7 from a USB device, a CD, or a DVD?

- to disable background services
- to delete registry keys
- to partition the hard drive
- **to repair the system**

Explanation: Disabling background services, deleting registry keys, and partitioning the hard drive do not require rebooting a PC. It might be necessary to boot a computer from a USB drive in order to repair the system in some situations.

12. What type of partition has the ability to create volumes spanning across more than one disk?

- primary
- active
- extended
- **dynamic**

Explanation: The primary partition contains the operating system files and is usually the first partition. The OS uses the active partition to boot the computer. The extended partition normally uses the remaining free space on a hard drive or takes the place of a primary partition. A dynamic partition is the only type of partition that allows creating volumes spanning over more than one disk.

13. What type of file system allows the use of files larger than 5 GB and is mostly used on internal hard drives?

- FAT32
- FAT64
- **NTFS**
- CDFS
- exFAT

Explanation: The file system exFAT, also known as FAT64, is used to address some of the shortcoming of FAT32 and is mainly used for USB flash drives. CDFS is used for optical drives. FAT32 allows the storage of files up to 4 GB in size. NTFS allows the storage of files up to 16 TB in size.

14. Which user account should be used only to perform system management and not as the account for regular use?

- guest
- standard user
- **administrator**
- power user

Explanation: The administrator account is used to manage the computer and is very powerful. Best practices recommend that it be used only when it is needed to avoid accidentally performing significant changes to the system.

15. Which type of user account is created automatically during a Windows 8.1 installation?

- **Administrator**
- Guest
- Remote Desktop user
- Standard user

Explanation: During a Windows 8.1 installation the Administrator account is created automatically. All other accounts have to be created manually.

16. A technician is attempting to repair a Windows 7 laptop that has a missing or corrupt OS file that prevents Windows 7 from starting up. The technician reboots the laptop and accesses the WinRE via the F8 key. Which option must the technician choose in the System Recovery menu to locate and fix the missing or corrupt system files?

- **Startup Repair**
- System Restore
- System Image Recovery
- Windows Memory Diagnostic

Explanation: Startup Repair will scan the hard drive and identify and fix any missing or corrupt OS files. WinRE options can also be accessed by booting from the installation media or a system repair disk.

17. When would the PXE option be used when repairing a PC?

- The display cannot be seen clearly.
- There is no response from the mouse or keyboard.
- **The computer needs a replacement operating system.**
- A newly installed application caused the system to perform erratically.

Explanation: The Preboot eXecution Environment (PXE, but pronounced pixie) BIOS boot option is used to install an operating system from a remote network location.

18. A user wants to extend a primary partition formatted with the NTFS file system with the unallocated space on the hard disk. What must the user do after the primary partition is extended to make it usable?

- **Convert the disk type to dynamic.**
- Ensure that the disk type is basic.
- Format the disk with the FAT64 file system.

- Partition the new space as a basic disk.

Explanation: A partition must be formatted with the NTFS file system in order to extend it by using the unallocated space on the disk. Once the partition has been extended, the disk type must be converted to a dynamic disk in order for the new partition to be accessible.

19. A user is viewing the Windows Disk Management utility and notices that one of the disks is marked as Foreign. What does this mean?

- This is a basic disk that has just been converted to a dynamic disk.
- This is a dynamic disk whose partition has been deleted.
- This is a dynamic disk from another PC running Windows.**
- This is a disk that does not contain a valid signature.

Explanation: When a dynamic disk is removed from another Windows PC and installed onto the current PC, the disk manager will note this and mark it as Foreign within the Disk Management utility.

20. What are two file attributes in the Windows environment? (Choose two.)

- details
- archive**
- read-only**
- security
- general

Explanation: The file attributes are read-only, archive, hidden, and system. Details, security, and general are tabs on the file Properties applet.

21. What are two functions of hypervisors? (Choose two.)

- to partition the hard drive to run virtual machines
- to protect the host from malware infection from the virtual machines
- to manage virtual machines**
- to allocate physical system resources to virtual machines**
- to share the antivirus software across the virtual machines

Explanation: The hypervisor does not protect the hosting OS from malware. Neither does it allow sharing software across virtual machines. The hard drive of the supporting computer does not need to be partitioned to run virtual machines. The hypervisor creates and manages virtual machines on a host computer and allocates physical system resources to them.

22. Which Windows utility can be used to schedule a regular backup for preventive maintenance?

- Windows Task Scheduler**
- Windows Task Manager
- Disk Cleanup
- System Restore

Explanation: Windows Task Scheduler is a tool that helps scheduling repetitive tasks, such as backups, antivirus scans, and more.

23. Which statement is correct about applying firmware updates?

- Firmware updates are sometimes irreversible.**

- It is possible to use the Roll Back feature to reverse the change.
- The firmware updates can be installed automatically using the Windows Service Pack utility.
- Firmware updates should not be included as part of the preventive maintenance program.

Explanation: Firmware updates can make the hardware unusable if not performed correctly. Sometimes it is not possible to revert to the original firmware once the update has been performed because of how the changes are applied to the EPROM technology.

24. What is true about restore points?

- Once System Restore is used to restore a system, the change is irreversible.
- Restore points back up personal data files.
- Restore points recover corrupted or deleted data files.
- **Restore points should always be created before making changes to a system.**

Explanation: Any change from a system restore is reversible. A restore point only contains information about the system and registry settings and therefore cannot be used to backup or recover data files.

25. A user has a computer that is infected with spyware. What should be performed before removing the spyware?

- **Disable System Restore.**
- Run Windows Update.
- Run a disk defragmentation.
- Create a full backup.

Explanation: An infected computer that performs a system restore will save the virus or spyware along with the restore point. Therefore, system restore files must be deleted before the removal of malware.

26. A technician is troubleshooting a Windows 7 laptop that takes significantly longer than expected when performing a file search. What is the possible cause?

- The file system is corrupt.
- The disk type is basic.
- The disk type is dynamic.
- The file permissions are not set.
- **The index service is not running.**

Explanation: The Windows indexing service is used to speed up file searches. A slow search may be the result of either the index service not running or not indexing the correct location.

27. A user reports that a PC is losing files, not opening some files, and is performing slowly. The technician suspects problems with the hard drive. What should be done to protect the data that is on the PC and to determine the source of the problem, without risking total drive failure?

- Run the format command, then replace the hard drive.

- Run chkdsk, then run format.
- Back up all important files, then replace the hard drive.
- **Back up all important files, then run chkdsk .**
- Run chkdsk, then back up all important files.

Explanation: Backing up important files is the first step in protecting existing data. After backing up, running chkdsk will allow the technician to determine if there are bad sectors on the hard drive, without losing any data.

28. A user logs into Active Directory on a workstation and the user home directory does not redirect to a network share on a file server. A technician suspects that the group policy setting is incorrect. Which command can the technician use to verify the group policy settings?

- rstrui
- runas
- tasklist
- **gpresult**
- gpupdate

Explanation: The functions of the listed commands are as follows:

runas – runs a program or tool with different permissions

rstrui – starts the System Restore utility

gpresult – displays group policy settings

gpupdate – refreshes group policy settings

tasklist – displays currently running applications

29. A company has recently deployed Active Directory and now a workstation cannot connect to a network resource. A technician takes corrective action by modifying group policy settings. Which command should the technician use to make the workstation synchronize with the new settings?

- runas
- rstrui
- tasklist
- gpresult
- **gpupdate**

Explanation: The functions of the listed commands are as follows:

runas – runs a program or tool with different permissions

rstrui – starts the System Restore utility

gpresult – displays group policy settings

gpupdate – refreshes group policy settings

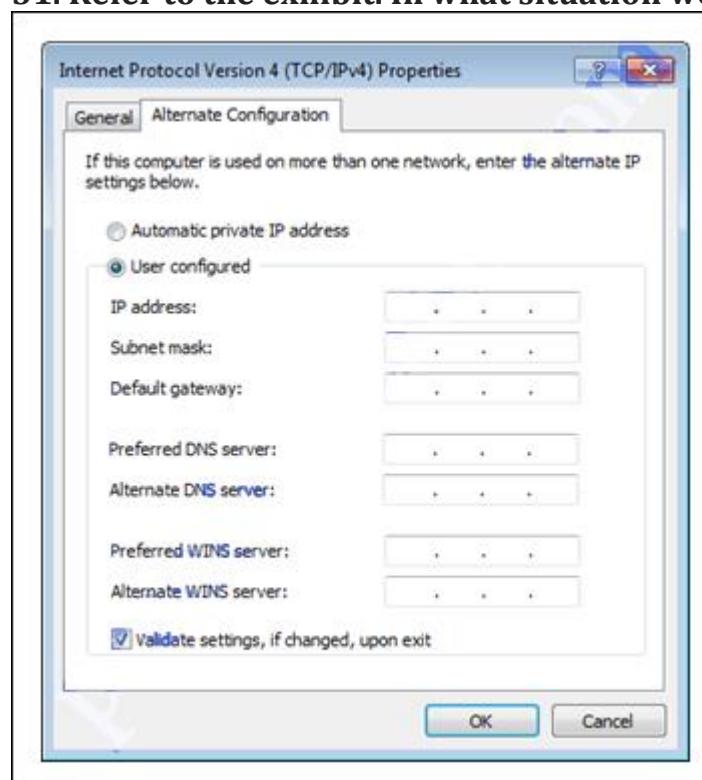
tasklist – displays currently running applications

30. A wired network is undergoing several changes that could leave it vulnerable to connection by unauthorized devices while the work is in progress. Which two temporary measures would enable the authorized devices to continue to have network access but prevent unauthorized devices from connecting? (Choose two.)

- Disable DNS.
- Disable SSID broadcast.
- **Disable DHCP.**
- Subnet the network.
- **Assign static IP addresses to the authorized devices.**

Explanation: Disabling DHCP and assigning static IP addresses only to authorized devices will prevent unauthorized devices from automatically obtaining IP address information. Without the correct IP address information, the unauthorized devices will not be able to communicate over the network. Disabling DNS will result in all connected devices no longer automatically being able to communicate with network resources by name (IP addresses would have to be used.), but will not prevent unauthorized devices from connecting and enabling potentially malicious access from occurring. Subnetting the network will change the range of IP addresses used but not prevent unauthorized network access. Disabling SSID broadcasts is only applicable to wireless networks, not wired networks.

31. Refer to the exhibit. In what situation would a technician use this tab?



- When the device will not be using the Internet.

- When a laptop is used both at work with DHCP and at home with a static IP address.
- When a device is behind a firewall and software is being used that needs access to a remote network.
- When the computer will be using a VPN connection and accessing the Internet while connected through the VPN.

Explanation: The Alternate Configuration tab allows a device to have two IP configurations. One configuration might set the network card to DCHP using the General tab and then configure a static IP address for the home network using the Alternate Configuration tab.

32. On a PC that is running Windows 7 Ultimate, a user sets up a home entertainment system and creates a homegroup. The user then joins two other PCs to the workgroup, one PC running Windows 7 Starter and the other running Windows 7 Home Basic. What else must the user do in order to have the user accounts on the Windows 7 Home Basic and Windows 7 Starter PCs access the shares on the home entertainment system?

- Users have to be added to the user accounts on the home entertainment PC.
- Users on the PC that is running Windows Starter cannot join the homegroup.
- Users on the PC that is running Windows Home Basic will have to be manually added to the homegroup.
- User accounts on all three PCs have to be added to the homegroup.
- **Nothing has to be done. All users accounts on all the PCs will automatically be added to the homegroup.**

Explanation: When Windows 7 PCs join a homegroup all user accounts on all the PCs are added to the homegroup. Windows 7 Starter and Windows 7 Home Basic PCs can join the homegroup but cannot be used to create a homegroup.

33. A user is reporting that a file has been shared specifically with another user on the network, but the other user opens the file and is unable to save it once edited. What is the probable cause?

- **The user shared the document with Read permissions.**
- The user forgot to share the parent folder.
- The file has the Archive attribute enabled.
- The file has been deleted.

Explanation: The permission setting should have been Change or Full Control. The Read permission does not allow edited files to be saved.

34. Which character of the Cloud model provides easy monitoring, controlling, reporting, and billing for both the provider and customers?

- rapid elasticity
- resource pooling
- **measured service**
- broad network access

- on-demand self-service

Explanation: With measured service of the Cloud model, the resource usage can be easily monitored, controlled, reported, and billed to provide full visibility to both the Cloud service provider and customers.

35. A business organization is configuring security on the mobile devices that are used in the organization. The security policy states that business data on mobile devices should only ever be accessed by employees. Which mobile device security feature can be used to best ensure that business data is rendered completely inaccessible if the device is lost or stolen?

- remote lock
- **remote wipe**
- passcode lock
- sandbox

Explanation: Remote wipe is a security feature that remotely clears the device of all user data to prevent it from being maliciously compromised. Remote lock and the user passcode lock features on mobile devices can help prevent theft of private information but the data remains on the device and may be accessed if the passcode is ever broken. Sandbox describes the running of mobile apps separate from the operating system.

36. An administrative assistant tries to link a Bluetooth keyboard and mouse to a computer. The keyboard does not work, but the mouse works fine. What are two issues that could cause this situation? (Choose two.)

- Wi-Fi is turned off.
- **The keyboard battery is dead.**
- Bluetooth is turned off.
- The Num Lock key has been inadvertently pressed.
- **The keyboard is too far from the computer.**

Explanation: Both Apple and Google release their own software development kits (SDKs) that allow developers to create apps for iOS and Android mobile devices. Developers can run the SDK and create apps on a simulator. SLA is an agreement between a service provider and customers.

37. What is needed from Apple and Google in order for individual programmers to develop apps for iOS and Android devices?

- SLA
- **SDK**
- firmware
- iOS or Android device

38. Which type of malware is disguised as a legitimate program?

- adware
- worm
- **Trojan**
- spyware

Explanation: Trojan horses disguise themselves as legitimate programs. Worms replicate themselves across a network. Adware may attach to a

legitimate program, but does not disguise itself. Spyware monitors the activities of a user.

39. After complaints from users, a technician identifies that the college web server is running very slowly. A check of the server reveals that there are an unusually large number of TCP requests coming from multiple locations on the Internet. What is the source of the problem?

- **A DDoS attack is in progress.**
- The server is infected with a virus.
- There is insufficient bandwidth to connect to the server.
- There is a replay attack in progress.

Explanation: The source of the problem cannot be a virus because in this situation the server is passive and at the receiving end of the attack. A replay attack uses intercepted and recorded data in an attempt to gain access to an unauthorized server. This type of attack does not involve multiple computers. The issue is not the bandwidth available, but the number of TCP connections taking place. Receiving a large number of connections from multiple locations is the main symptom of a distributed denial of service attack which use botnets or zombie computers.

40. Which security threat hides the resources that it uses from antivirus programs?

- worm
- Trojan
- **rootkit**
- spyware

Explanation: Rootkits target a known vulnerability to gain administrator-level access. This gives the rootkit the ability to hide itself. Trojans, worms, and spyware do not gain administrator level access.

41. A user receives an email requesting verification of the password that is used to access bank files. What type of security threat is this?

- virus
- social engineering
- **phishing**
- malware

Explanation: Phishing is a form of attack that starts with the attacker pretending to be a legitimate entity and then tries to gather information that can be used to conduct the exploit.

42. A cleaner attempts to enter a computer lab but is denied entry by the receptionist because there is no scheduled cleaning for that day. What type of attack was just prevented?

- Trojan
- shoulder surfing
- war driving
- **social engineering**
- phishing

Explanation: Social engineering is when a person attempts to manipulate another individual to gain access to information or resources to which they are not entitled.

43. Which two precautions can help prevent social engineering? (Choose two.)

- **Always ask for the ID of unknown persons.**
- **Escort all visitors.**
- Keep your password securely under your keyboard.
- Do not allow any customers into the workplace.
- Always require a user name and password to be configured.

Explanation: Asking for IDs and escorting visitors are effective ways to prevent social engineering. Users should never keep their passwords in the work area. Eliminating customers is not always practical for business purposes.

44. A company has replaced five desktop computers in the accounting and finance department with new computers. The plan is to donate the recovered computers in a fully functional state to a not-for-profit community organization. How can the company ensure that sensitive financial data cannot be accessed once the computers are donated?

- **Data wipe the hard drives by using specialized software.**
- Perform a high-level format on the hard drives.
- Drill holes through the hard drive platters.
- Delete all the files and directories on the hard drives.

Explanation: Data wiping the hard drives with software that will securely erase all data will ensure that company data cannot later be accessed. This may be time consuming but for a small number of computers this is more cost-effective than the expense of degaussing. Deleting all the files and directories on the hard drives or performing a high-level format on each drive will leave the computers vulnerable to having the company data recovered by specific forensic software. Drilling holes in the hard drive platters would mean that the computers are no longer in working condition.

45. Match the task to the Windows Control Panel utility. (Not all options are used.)

Display/Display Settings	view hidden files
Devices and Printers	<input checked="" type="checkbox"/> Folder Options
Folder Options	configure PC to use DHCP
Network and Security Center	<input checked="" type="checkbox"/> Network and Security Center
User Accounts	allow ICMP packets in
	change color quality
	<input checked="" type="checkbox"/> Display/Display Settings
	change account settings
	<input checked="" type="checkbox"/> User Accounts
	view hardware status
	<input checked="" type="checkbox"/> Devices and Printers

46. Match the task to the Windows 10 Control Panel utility. (Not all options are used.)

view hidden files	User Accounts
configure PC to use DHCP	change account settings
accept ICMP packets	
check stored web passwords	Credential Manager
change account settings	check stored web passwords
view hardware status	
	Network and Sharing Center
	configure PC to use DHCP
	Devices and Printers
	view hardware status
	File Explorer Options
	view hidden files



47. Match the scripting language with the script file name extension. (Not all options are used.)

.py	Linux Shell Script
.sh	.sh
.js	
.bat	Windows Batch File
.vbs	.bat
.ps1	PowerShell
	.ps1
	Python
	.py
	JavaScript
	.js



48. Match the file system term used in Linux to the function.

ext4	supports increased file sizes
journaling	minimizes file corruption risk in the event of power loss
MBR	provides hard drive space that holds inactive RAM content
swap file system	stores information about how the file system is organized

Explanation: The certification objectives list the words “swap file system” as a term to be defined as it relates to the Linux file system. Swap space, swap file, or swap partition are other words for describing hard drive space that is used when the system needs more memory than there is RAM.

49. Which two data storage locations contain persistent data that can be used by computer forensics specialists? (Choose two.)

- cache
- RAM
- CPU registers
- **hard disk drives**
- **solid state drives**

Explanation: Persistent data is data stored on an internal or external hard drive, or an optical drive. Data is preserved when the computer is turned off.

50. On which two occasions is it most likely that a technician will have to perform a clean operating system installation if a backup has not been performed? (Choose two.)

- **The existing operating system is corrupted.**
- The computer is being moved to a different network.
- A user requires access to a new printer.
- The existing security software requires upgrading.

- A new replacement hard drive is installed in a computer.

51. Which three items are biometric security devices? (Choose three.)

- smart card
- **fingerprint reader**
- password
- key fob
- **voice recognition**
- **retina scanner**

Explanation: Fingerprint readers, retina scanners, and voice recognition are all biometric devices, comparing physical characteristics of the user to stored data to authenticate the user. Smart cards, key fobs, and passwords are all security measures, but do not rely on biometrics.

52. Which two guidelines are appropriate for creating strong passwords? (Choose two.)

- **Include letters, numbers, and symbols.**
- Passwords should contain symbols only.
- Change the password once each year.
- **Use at least eight characters.**
- Use only upper case and numeric values in passwords.

Explanation: Strong passwords should be at least eight characters, and should include upper and lower case letters, numbers, and symbols. Although passwords should be changed regularly as specified in the local security policy, the amount of time between changes has no effect on the creation of strong passwords. Limiting a password to only symbols, or to only numbers and upper case letters, does not provide the strongest password possible.

53. A support desk technician is dealing with an angry customer. Which two approaches should the technician take in dealing with the customer?

(Choose two.)

- Ask socially related questions to direct the customer away from the problem.
- **Let the customer explain the problem without interrupting.**
- Immediately transfer the customer to a higher level technician.
- **Work to redirect the conversation to solving the problem.**
- Reply to the customer with the same level of anger.

Explanation: Angry customers should be allowed to explain the problem, then be redirected to discussing how the problem can be solved. Transferring the customer, replying in a rude tone, and asking unrelated questions will usually increase, not ease, the anger being expressed by the customer.

54. A technician working on a computer discovers what is suspected to be illegal activity. Which three pieces of information should be immediately documented? (Choose three.)

- **evidence of the suspected illegal activity**
- technical specifications of the computer
- **why the computer was accessed by the technician**

- **location of the computer**
- details of all past users of the computer
- duration of the suspected illegal activity

Explanation: The initial reason for accessing the computer, the suspected illegal matter or operations, and the location of the computer are immediately apparent to the technician and should be among the first details documented. Details of past computer users and the duration of the illegal activity are matters that the appropriate investigators will determine. The technical specifications of the computer may have little relevance to its illegal use.

55. What two roles or tasks are associated with level two technicians?

(Choose two.)

- prioritizing incoming calls according to their severity
- **remotely updating drivers and software on customer computers**
- escalating a trouble ticket to a higher level technician
- **gathering diagnostic information from a customer computer**
- gathering customer information to initiate a work order

Explanation: Level two technicians are primarily tasked with receiving and working on escalated work orders. Their tasks involve using remote access software to connect to the computer of a customer to perform maintenance and fixes.

56. A store in a shopping center uses a wireless network to provide internet access for three tablet computers. The authentication to the wireless router has been configured as 128-bit WEP. Recently the store employees notice that the internet connection is getting slower. The network administrator of the shopping center reviews the logs of the wireless router and notices many non-store devices are associated with the router. Which two actions can the network administrator do to improve the security of the wireless network access? (Choose two.)

- **Use the MAC address filtering feature.**
- **Change WEP to WPA2 protocol.**
- Ensure that the shared key is randomly generated.
- Use a 32-character long SSID.
- Change to the 152-bit WEP protocol.

Explanation: The SSID is used to identify the wireless LAN and should not be considered a method for securing the WLAN. WEP encryption is weak and prone to attacks with wireless hacking tools. WEP should not be used and has been replaced by the much more secure WPA2 protocol. MAC address filtering can ensure that only authorized devices can be associated with the wireless router.

57. A user is hiking in a city park. The user wants to make a call home but cannot get a reliable cellular signal. What are two possible causes for the bad cellular coverage? (Choose two.)

- The distance to the nearest Wi-Fi access point is too far.
- **The user is located between coverage areas of the carrier.**

- The location service is turned off.
- The Bluetooth headset is unpaired.
- **There are not enough cell towers in the area.**

Explanation: A mobile user may experience weak or dropped signal issues if there are not enough cell towers surrounding the area or the location is not covered well by the carrier.

58. A user purchases a new smartphone and is trying to use a high quality Bluetooth headset on the new device. However, the headset is not connected to the smartphone. What are three settings that the user needs to check to troubleshoot the problem? (Choose three.)

- The battery capacity on the smartphone is above 50%.
- The USB port on the headset is working.
- The authentication service is turned on.
- **The Bluetooth connection is enabled on the smartphone.**
- **The headset is turned on.**
- **The pin code is entered correctly.**

Explanation: Three factors contribute to a successful pairing between a Bluetooth capable host (the smartphone in this case) and a Bluetooth device (the headset):

- The Bluetooth device is turned on.
- The pin code is entered correctly.
- The Bluetooth connection is enabled on the mobile device.

59. A third-party security firm is performing a security audit of a company and recommends the company utilize the Remote Desktop Protocol. What are two characteristics of the Microsoft Remote Desktop Protocol (RDP)? (Choose two.)

- **RDP uses an encrypted session.**
- **RDP connects on TCP port 3389.**
- RDP requires a Windows client.
- RDP is a command-line network virtual terminal protocol.
- RDP connects on TCP port 22.

Explanation: The Remote Desktop protocol (RDP) is used to remotely access a Windows OS. It is a client/server protocol. The port number for RDP is TCP port 3389 and it uses encryption.

60. A computer can successfully ping outside the local network, but cannot access any World Wide Web services. What is the most probable cause of this problem?

- Windows Firewall blocks port 23 by default.
- The computer network interface card is faulty.
- The BIOS or CMOS settings are blocking web access.
- **Windows Firewall is blocking port 80.**

Explanation: The World Wide Web (HTTP) protocol uses port 80; port 23 is used by Telnet. Successful pings to other devices indicate that the network

interface card is working correctly. BIOS and CMOS settings control system hardware functions, not network applications such as the World Wide Web.

61. Which question would be an example of an open-ended question that a technician might ask when troubleshooting a security issue?

- Have you scanned your computer recently for viruses?
- Is your security software up to date?
- Did you open any attachments from a suspicious email message?
- **What symptoms are you experiencing?**

Explanation: Close-ended questions generally have a fixed or limited set of possible responses, such as “yes” or “no”. Open-ended questions imply no limited or fixed set of replies but rather generally prompt the responder to provide more meaningful feedback.

62. A technician is troubleshooting a computer security issue. The computer was compromised by an attacker as a result of the user having a weak password. Which action should the technician take as a preventive measure against this type of attack happening in the future?

- **Ensure the security policy is being enforced.**
- Verify the physical security of all offices.
- Scan the computer with protection software.
- Check the computer for the latest OS patches and updates.

Explanation: As part of the fifth step of the troubleshooting process, technicians should apply preventive measures whenever possible. Most company security policies include a section on password complexity and length requirements. Ensuring that this policy is being enforced can help prevent attackers from being able to compromise systems through password cracking.

63. A user notices that some of the programs that are installed before upgrading to Windows 7 no longer function properly. What can the user do to fix this problem?

- Lower the UAC setting in the Change User Account Control settings dialog box of the User Accounts control.
- **Reinstall the programs in Compatibility Mode.**
- Update the driver for the graphics card.
- Change the file system to FAT16.

Explanation: UAC is used to change user account settings while converting the file system to FAT16 and updating the driver for the graphics card will not resolve the issue. Compatibility mode in Windows 7 allows for the running of a program created for previous versions of the Windows environment.

64. In which folder are application files for 32-bit programs typically located on a computer that is running a 64-bit edition of Windows 7?

- C:\Users
- **C:\Program Files (x86)**
- C:\Application Data
- C:\Program Files

Explanation: The C:\users folder contains all the user profiles. The C:\Application Data folder contains application data related to all users. The 32 bit program files are located in the C:\Program Files(x86) folder while 64 bit program files are located in the C:\Program Files folder.

65. What is required in order to connect a Wi-Fi enabled laptop to a WPA secured wireless network?

- **a security encryption key**
- a MAC address
- a username and password
- an updated wireless driver

Explanation: Regardless of the levels of security configured on a WLAN, a WPA secured WLAN always requires the use of an encryption key. Without the proper key, a device cannot connect to the network.

66. What is a feature that can be used by an administrator to prevent unauthorized users from connecting to a wireless access point?

- **MAC filtering**
- WPA encryption
- software firewall
- proxy server

Explanation: Limiting a certain set of MAC addresses to connect to an access point is a way to ensure that only those devices are allowed to use the wireless network. A software firewall is used to prevent other users from gaining access to the protected computer. Configuring WPA encryption does not guarantee that the unauthorized user will not find the way to connect to the network. A proxy server is mostly used to filter traffic based on content.

67. A user is configuring a wireless access point and wants to prevent any neighbors from discovering the network. What action does the user need to take?

- Configure a DNS server.
- **Disable SSID broadcast.**
- Enable WPA encryption.
- Configure DMZ settings.

Explanation: Disabling SSID broadcast prevents the access point from announcing the name of the network. Enabling WPA encryption, configuring DMZ settings, and configuring a DNS server will accomplish different tasks, but the name of the network will still be announced.

68. Which setting must be turned on in order to share a printer in Windows 7?

- Sharing
- Share this Printer
- Windows Firewall
- **File and Printer Sharing**

Explanation: File and Printer Sharing must be turned on in order to share a printer in Windows 7. Share this Printer is a setting in Windows XP. Sharing is

a setting in Windows Vista. Windows Firewall is not required to be turned on in order to share a printer.

69. A user is able to only access files required to perform a specific task.

What type of security practice is being applied?

- **principle of least privilege**
- principle of most privilege
- principle of privileges
- principle of necessary privilege

Explanation: Limiting access to files or folders that are needed to perform a specific job is known as the principle of least privilege. The other options do not exist.

70. A technician is troubleshooting a workstation in a domain that has been infected with a virus. What is the first step the technician should take to clean the infected workstation?

- Run the antivirus software.
- Turn off system restore.
- **Disconnect the workstation from the network.**
- Update the antivirus software.

Explanation: The first step is to disconnect the infected workstation from the network. This will quarantine the infected workstation and prevent the virus from spreading throughout the network.

71. A technician is about to install and configure a wireless network at a small branch office. What is the first security measure the technician should apply immediately upon powering up the wireless router?

- Disable the wireless network SSID broadcast.
- Configure encryption on the wireless router and the connected wireless devices.
- **Change the default user-name and password of the wireless router.**
- Enable MAC address filtering on the wireless router.

Explanation: The first action a technician should do to secure a new wireless network is to change the default user-name and password of the wireless router. The next action would usually be to configure encryption. Then once the initial group of wireless hosts have connected to the network, MAC address filtering would be enabled and SSID broadcast disabled. This will prevent new unauthorized hosts from finding and connecting to the wireless network.

72. A company has a preventive maintenance policy that requires every computer have a new restore point created every six months. For computers using the Windows 7 operating system, how can a technician create the restore point?

- From the CLI enter the command restore /cn.
- Choose Start > Control Panel > Accessories > System Tools > System Restore > Create a restore point.

- Choose Start > All Programs > Accessories > System Tools > System Restore > Next.
- Right-click My Computer and then choose Properties > Restore > Create Restore Point.

73. What does virtual memory provide to an operating system?

- the creation of virtual partitions on the hard drive
- an increase in data storage
- an increase in the speed of accessing RAM
- a temporary storage of data until enough RAM is available to process it

Explanation: The OS uses virtual memory when a computer does not have enough RAM available to run a program. Virtual memory moves data from RAM and places it in a paging file on the hard drive. A paging file is a place where data is stored until enough RAM is available to process the data. This process is much slower than accessing the RAM directly.

74. Why would an administrator use Windows Remote Desktop and Windows Remote Assistant?

- to provide secure remote access to resources on another network
- to connect to a remote computer over the network to control its applications and data
- to connect to an enterprise network across an unsecured connection and act as a local client of that network
- to enable sharing of files and presentations with a group of users over the Internet

Explanation: Windows Remote Desktop and Remote Assistant allow an administrator to connect a local computer with a remote computer across the network and to interact with it as though it were the local computer. The administrator sees and can interact with the desktop of the remote computer. With Remote Desktop, the administrator logs onto the remote computer using an existing user account and starts a new user session. No user is required at the remoter computer to allow this access. With Remote Assistant, the purpose is for a technician to interact with a remote computer with the assistance of a remote user. The remote user must allow the remote access to the current user session and is able to observe what the technician is doing.

75. A technician needs to check the system settings on a remote computer to make sure it will be compatible with a new software update that will be sent out. The technician will use an administrator account to log in and start a user session on the remote PC. Which Windows tool will the technician use to accomplish this?

- Windows file sharing services
- Windows VPN remote access client
- Windows Remote Desktop
- Windows Update Assistant

Explanation: Windows Remote Desktop allows a technician to log in to a remote computer through an existing user account. The technician can run

programs and view and manipulate files within the system of the remote computer.

76. A business traveler connects to a wireless network with open authentication. What should the traveler do to secure confidential data when connecting to the business services?

- **Connect with a VPN.**
- Change the network location profile to public.
- Change the Windows firewall settings.
- Manually configure an IP address, subnet mask, and default gateway.

Explanation: A VPN is used to form a secure tunnel across a public network. This technology allows users to communicate over an insecure network and yet keep data confidential. Changing the network location profile will modify firewall settings on a computer but not increase the confidentiality of data crossing a network. Modifying the IP address, subnet mask, and default gateway will not change the confidentiality of data transmitting on a network.

77. What determines the level of support that a call center technician will provide to an individual customer?

- A level one technician will provide a higher level of support than a level two technician.
- **Support is based on the SLA for that customer.**
- An individual call center technician chooses the level of support based on the time available to assist the customer.
- All customers receive the same level of support by the call center.

Explanation: A call center technician must provide the level of support that is outlined in the SLA for that individual customer.

78. A corporation has expanded to include multiple remote offices around the globe. Which technology should be used to allow the remote offices to communicate and share network resources privately?

- **VPN**
- Remote Desktop
- Remote Assistance
- administrative share

Explanation: A Virtual Private Network (VPN) is used to connect remote sites together securely over a public network.

79. A user has been using a smartphone for several hours, but now the applications on the device have become unresponsive. What action should the user take?

- Restore the mobile operating system from a backup.
- Reconfigure settings.
- **Restart the device.**
- Reset the device to factory defaults.

Explanation: Restoring a device to factory defaults should only be done if either or both of the following have failed: restarting the device or turning the device off and powering it back on again.

80. A security audit for the human resources office finds that most employees leave confidential information on the screen when they are out of office for a short period of time. Which Windows control panel link should be used to make the monitor show a screen saver after a few minutes of inactivity and require that the user re-authenticate?

- Windows Firewall
- Device Manager
- Network and Sharing Center
- **Personalization**

Explanation: Use the **Control Panel > Personalization > Screen Saver** path to select a screen saver and enable the **On resume, display logon screen** option.

81. Which statement describes most enterprise software licenses?

- Developers are allowed to modify and share the source code of the software.
- **A company is allowed to use the software campus wide.**
- A user is allowed to share the software with friends.
- A user is allowed to install the software on only one computer.

Explanation: Enterprise software licenses enable many employees of an organization to use a software application, often without the need to register the individual installations. Personal software licenses are intended for personal use of the product. Most personal software licenses allow a user to run the software on only one PC. Open source licenses allow users to modify and share the source code of the software.

82. In a Linux operating system, which component interprets user commands and forwards them to the OS?

- **shell**
- CLI
- application program
- kernel

Explanation: The functions of different components of a Linux system are as follows:

- **CLI** – command-line interface, accepts user commands
- **shell** – a program that interprets the user commands and passes them to the OS
- **kernel** – manages CPU and RAM allocation to processes, system calls, and file systems
- **application program** – program for various applications

83. In Linux and OS X, which CLI command can be used to display the name of the current directory?

- **pwd**
- ps

- chmod
- sudo

Explanation: The functions of listed CLI commands of Linux and OS X systems are as follows:

- ps – lists the process currently running in the system
- pwd – displays the name of the current directory
- sudo – runs a command as another user
- chmod – modifies file permissions

84. When installing application software on a Windows 7 workstation, the user sees an error message indicating that the installation is unsuccessful.

What should the user try next?

- Run the chkdsk /R command.
- Restart the installation process with the services.msc utility.
- Use the bootrec /fixmbr command from the System Recovery option.
- **Run the installation under compatibility mode.**

Explanation: A possible reason that an application does not install successfully is that the application is not compatible with Windows 7. An application does not register its service if it is not installed successfully.

The chkdsk command is used to check and recover disk errors. The bootrec command is used to check and recover the MBR/GPT of a system.

85. A virus has infected several computers in a small office. It is determined that the virus was spread by a USB drive that was shared by users. What can be done to prevent this problem?

- Destroy the USB drive.
- **Set the antivirus software to scan removable media.**
- Activate Windows Firewall.
- Change the passwords on the computers.

Explanation: To prevent the problem, the antivirus software should be configured to scan removable media. Destroying the USB drive will prevent that device from spreading the virus to other computers, but will not prevent future transmission of viruses from USB drives. Windows Firewall is a useful tool, but it does not prevent the spread of viruses.

86. Which wireless encryption method is the least secure?

- TKIP
- AES
- **WEP**
- WPA

Explanation: WEP is the weakest encryption method. WPA, AES, and TKIP are considered enhancements to the WEP standard and therefore are more secure.

87. A customer is explaining a problem with a computer to a technician. The technician recognizes the problem prior to the customer finishing the explanation. What should the technician do?

- Interrupt the customer and let the customer know that the technician knows what the problem is.
- Ask the customer to repeat the problem so that the technician can document it and verify all the facts.
- **Wait politely for the customer to finish explaining the problem.**
- Start working on the PC while listening to the customer at the same time.

Explanation: It is always important to allow the customer to finish explaining the problem at hand. You should always be attentive and actively listen to the customer without interrupting and acknowledge the customer occasionally to affirm that you are actively listening to the customer.

88. The Windows PC of a user was shutdown abruptly due to a sudden loss of power. The user then reports that the workstation has lost several files. A help desk technician suspects that part of the hard disk might be damaged. Which Windows utility can the technician use to scan the hard disk and make repairs if necessary?

- Disk Cleanup
- Disk Defragmenter
- **Chkdsk**
- System File Check

Explanation: The utility Chkdsk in Windows can be used to check the integrity of files and folders on a hard drive by scanning the file system. It also checks the disk surface for physical errors and tries to fix the errors.

89. A user calls the help desk and reports that the workstation, when powering up, displays error messages about an invalid system disk or invalid boot disk. When a technician comes to the office, the user mentions that the workstation was working well the day before. The technician checks the workstation and makes sure that the cable is firmly connected between the hard drive and the motherboard. What is another likely cause of the problem?

- The boot service fails to start.
- **The MBR/GPT is corrupted.**
- Some of the operating system files may be corrupted.
- A recently installed device driver is incompatible with the boot.

Explanation: These error messages indicate that the workstation cannot detect the hard drive as a bootable device. One possible cause is that the MBR/GPT on the hard drive is corrupted so that the workstation cannot locate a valid partition that holds the necessary codes to start booting.

90. A user calls the help desk and reports that invalid system disk or invalid boot disk error messages display on the workstation when it is powered on. When a technician comes to the office, the user mentions that the workstation was working well the day before. The technician suspects that the MBR is corrupted. Which process can the technician use to check and repair the MBR?

- Run the sfc command.
- **Run the bootrec command.**
- Boot the workstation in Safe Mode.
- Run the chkdsk command.

Explanation: The **bootrec** command can be used to repair and troubleshoot MBR issues. The **chkdsk** command can be used to check the integrity of files and folders by scanning the hard disk surface for physical errors. The **sfc** command can be used to verify and replace important Windows system files.

91. A student tells a teacher that many junk emails are appearing on a new personal laptop. What is a possible cause of the problem?

- The laptop needs to be updated to the latest OS version.
- The student has spent too much time surfing the web.
- The school email server is not functioning properly.
- **The new laptop does not have antivirus or anti-spam software installed.**

Explanation: A new computer should have antivirus, or anti-spam filter for the email client, or anti-spam software installed to protect from spammers.

92. A sales representative is driving to visit several customer sites in the city. The representative notices that the smartphone is draining battery power more quickly than normal. What is a possible cause of the issue?

- The battery charger is malfunctioning.
- The smartphone was not fully charged.
- There are not enough Wi-Fi access points in the area.
- **The smartphone is roaming among cell towers.**

Explanation: When a mobile device is roaming among cells, the battery consumption is increased because the device needs to detect and negotiate with cell towers for connections. What the user experienced here is relative to the normal use. Thus, the issues of whether the device is fully charged and the condition of the battery charger are irrelevant.

93. A user attended the wedding of a coworker and took pictures using a smartphone. The user receives phone calls from several coworkers the next day and is shocked to learn that these pictures now appear on multiple web pages. What is a possible cause for the incident?

- The smartphone is set to automatically upload files to the coworker group folder.
- The passcode for the smartphone has been hacked.
- The smartphone sent the pictures to the websites by mistake.
- **The user account for the cloud service has been hacked.**

Explanation: Many service carriers offer cloud-based storage for mobile devices to upload contents to the cloud service for backup purposes. However, if the user account to the cloud service is compromised, a hacker can access the contents freely.

94. A student is jogging in a city park. The student has an app on the smartphone that tracks exercise activities. The student receives a notification that a new email has been received and stops to read the email message. However, the email app is slow to respond. What is a reason for the slowness of the app to open?

- The smartphone OS is frozen.
- The smartphone is unable to decrypt the email message.
- **The exercise tracking app is using the GPS service.**
- The email app requires a large amount of RAM.

Explanation: The health app uses the GPS receiver to track certain exercise activities, such as jogging and running. GPS service uses a lot of device resources to find and sync with satellites. The GPS receiver locks onto the signals sent from the satellites and constantly calculates its position relative to these satellites. After the position has been determined, the GPS receiver calculates other information, such as speed, time, and distance to a programmed destination. While the GPS receiver is working, a mobile device may appear slow in response to other apps.

95. A user reports that the PC displays a warning message. The warning message indicates that the PC is infected by a virus. A technician comes with a USB drive that contains a malware detection and removal program. What should the technician do before running the program?

- Disconnect the hard drive.
- Change the BIOS setting to make the USB drive bootable.
- **Boot the PC in Safe Mode.**
- Make a backup of the data.

Explanation: Booting the PC in Safe Mode will prevent most drivers and applications from loading into the system. These may include drivers and programs related to malware. Safe Mode allows the antivirus software to scan all areas of the disk.

96. A user reports that a Windows 10 PC displays a warning message. The warning message indicates that the PC is infected by malware. A technician comes to the office and makes sure that the PC is disconnected from all wired and wireless networks. What should the technician do next to further investigate the incident?

- Boot the PC in Safe Mode.
- **Save log files to removable media.**
- Disconnect the hard drive.
- Move the malware to the Quarantined Items folder.

Explanation: When a malware protection program detects that a computer is infected, it removes or quarantines the threat. However, the computer is most likely still at risk. The first step to remediating an infected computer is to remove the computer from the network to prevent other computers from becoming infected. The next step is to follow any incident response policies that are in place. The log files should be saved to a removable media for

further analysis. Restarting an infected PC may destroy the evidence of infection.

97. All Windows 10 computers in a small advertising company are configured with the System Restore service. One of the PCs was infected by malware when an employee was doing research on the internet. The IT administrator scans the system and deletes the malware from the Quarantined Items folder. What should the administrator do next to complete the remediation process?

- **Delete all restore points.**
- Disable the System Restore service.
- Create a restore point.
- Restore the system from a backup.

Explanation: Once the System Restore service is turned on, a PC will create regular restore points. When the PC is infected with malware, the system restore points may contain infected files. Deleting all system restore points after the system has been remediated, prevents bringing infected files into the system when the System Restore service is needed.

98. A mobile user downloads and installs an app. Once the app is installed, the Android mobile device is frozen. What is a cause for the issue?

- The mobile OS needs to be replaced.
- Additional apps are needed for the app to function correctly.
- **The app is not compatible with the device.**
- The app needs an update.

Explanation: A new app may not have been designed properly and may not be compatible with the OS on an Android device. Because of this, the device may appear frozen.

99. When a user tries to run a program, a missing or corrupt DLL message is displayed. What is a solution to fix the problem?

- Use the msconfig command to adjust the startup settings for the program.
- Run Windows Startup Repair.
- **Run sfc /scannow in Safe Mode.**
- Reinstall the correct drivers.

Explanation: A possible solution to a reported missing or corrupt DLL is to restart the computer in Safe Mode and run **sfc /scannow**. Windows Startup Repair is used to solve Windows startup problems. Adjusting the program startup settings by using **msconfig** is applicable only to programs that start correctly. Drivers relate to hardware, not to programs.

100. A programmer needs to automate processes and tasks in an operating system. Which tool would the programmer use to build a script file?

- **a text editor**
- a compiler
- a comparison operator
- an executable automation tool

Explanation: A script file is a simple text file used to automate processes and tasks on various operating systems. A “script” can be created by any common text editor.

101. A company has a guest wireless network available for visitors while on the company premises. A technician has noted that unauthorized users are connecting to this wireless network from outside the premises. Which action can be taken to reduce unauthorized connections to the guest wireless network while enabling visitors to still connect quickly and easily without assistance while on the company premises?

- Enable MAC address filtering.
- Configure WPA encryption.
- **Reduce the radio power level.**
- Disable SSID broadcast.

Explanation: Reducing the transmitted radio power to a level that gives network coverage only within the company premises will enable authorized visitors to continue to connect to the guest network connect quickly and easily without assistance, but prevent connection from outside the premises. Enabling MAC address filtering, configuring WPA encryption, and disabling SSID broadcast will prevent unauthorized access to the network. However, these actions will also make it more difficult for visitors to connect when the requirement is for quick and easy access without assistance.

102. What is an example of a web application using multifactor authentication?

- A user logs on to an online shopping website and uses a credit card to make an order.
- Teleworkers are required to establish a VPN connection to the company before logging into the company internal web server.
- **A user attends a large conference and tries to access Google Gmail at the conference site. The Gmail service sends a verification code to the smartphone of the user.**
- A network administrator needs to swipe a card in order to access the corporate server room.

Explanation: When multifactor authentication is implemented, two or more different authentication methods are used. Multifactor authentication is often used when accessing online services. For example, when a user wants to access a service, an authenticator application sends a code called a one-time password (OTP) to the registered phone or email address of the user. The user must supply the correct account username and password plus the OTP code to authenticate.

103. A user calls the help desk with the following situation. “I added a new PC to my LAN. I can ping other devices on my LAN but not any remote devices.” What advice should the help desk agent give to the caller?

- Set the file permissions to read and execute.
- If using Windows, set the idle timeout and screen lock.

- **Check the IP address configuration on the new PC, because the default gateway may be incorrect.**
- Create a virtual machine with an OS that supports the application.

104. Which statement describes the active partition?

- It is a physical section of a hard disk. It can contain an operating system to boot the system and cannot be subdivided.
- **It is used to boot an operating system by default.**
- It is often used to organize data storage by subdividing it into as many as 23 logical sections.
- It is a section of an extended partition on an MBR. It can be used to separate information for administrative purposes.

105. A technician has just purchased a new Windows 10 PC and wants to transfer selected files, folders, profiles, and applications from the old Windows PC. What tool or utility would be the best choice for the user?

- Upgrade Assistant
- User State Migration Tool
- Windows Task Manager
- **PCmover Express**

Explanation: PCmover Express is the software tool recommended by Microsoft to automatically moves files, settings, and user profiles from an old PC to a new one. The free version is no longer available, and there is a cost to use it from LapLink.

106. A user wants to copy a group of files from one Windows directory to another. What is the best Windows command to select to do the job?

- regsvr32
- sfc
- DISM
- **robocopy**
- tasklist

107. A technician wants to create customized system image files that will be installed on computers in the network. Which administrative command-line tool or command can be used to address this?

- msinfo32
- mstsc
- **dism**
- diskpart

108. A user finds that when launching a downloaded Windows update file, Windows Update fails. What are two possible causes for this? (Choose two.)

- **The downloaded update file is corrupted.**
- **A previous update that is required for the current update is not installed.**
- The Windows Firewall is turned off.
- The virus definitions are out of date.
- The hard disk is failing.

Explanation: In the event that the downloaded update file is corrupted or a previously required update was not installed, the Windows Update process will fail.

109. Which key or key sequence pressed during the boot process will allow a user to start a Windows PC using the last known good configuration?

- **F8**
- F12
- Windows key
- Alt-Z
- F1

110. A technician notices that an application is not responding to commands and that the computer seems to respond slowly when applications are opened. What is the best administrative tool to force the release of system resources from the unresponsive application?

- Add or Remove Programs
- **Task Manager**
- Event Viewer
- System Restore

Explanation: Use the Task Manager **Performance** tab to see a visual representation of CPU and RAM utilization. This is helpful in determining if more memory is needed. Use the **Applications** tab to halt an application that is not responding.

111. A technician has successfully removed malware from a PC and finds that when the system is rebooted error messages are displayed about missing and corrupt system files. What utility can the technician use to replace or fix any corrupted system files?

- Regedit
- ASR
- Fixboot
- Fixmbr
- **SFC**

Explanation: ASR is used to recover the operating system when it is totally corrupt and will not boot. Regedit is a registry editor whereas Fixmbr and Fixboot are command line utilities that can be used to repair corrupt boot records. SFC is used to check the integrity of any system files that may have been corrupted and repair them.

112. Which disk management tool scans the critical files of an operating system and replaces the corrupt files?

- Optimize Drives
- Disk Cleanup
- Chkdsk
- Scandisk
- **System File Checker**

Explanation: System File Checker will scan critical files of an operating system and replace corrupt files. Scandisk and Chkdsk check the integrity of files and folders on a hard drive. Optimize Drives optimizes space on a hard drive. Disk Cleanup will clear space on a hard drive by looking for files that can be deleted.

113. A computer technician is notified by a user that there are no automated backups being created on an Apple computer. What is the first thing the technician should check?

- if space is available on the local drive
- whether Remote Disc is enabled
- **whether Time Machine is turned on**
- correct date and time configuration

Explanation: Time Machine is the OS X backup tool. To verify whether the tool is turned on, access **Settings > Time Machine**.

114. A user reports that an application crashed. The technician tries a few other applications on the PC and finds that none of them start normally or that they crash soon after being launched. What is a possible cause of the problem?

- The applications need updates from the software vendors.
- The Windows Firewall is turned off for the Private networks profile.
- **The PC is infected by a virus.**
- The hard disk is failing.

Explanation: A virus infection could cause issues such as a file name change, one or more applications crashing, or files disappearing on a PC. The failing hard disk and lack of updates from the vendors should not cause the same issues for multiple applications. The Windows Firewall being off is not a direct cause of such issues.

115. A user calls the help desk and reports that a security alert appears on the screen about a malware attempt to enter the PC. What should the technician instruct the user to do?

- Stop wired or wireless network connection immediately.
- Close the email client software.
- Turn on the Windows Firewall.
- **Scan the PC to remove any malware.**

Explanation: The security alert indicates that the antimalware software has detected a potential malware attack. There could be other malware attacks toward the PC. Therefore, the user should be proactive and run a thorough security scan to remove any malware that is found.

116. A user is shopping in a mall and gets a notification that a new email is received on the smartphone. The user is wondering how the email message was delivered because the data usage feature is turned off. The user notices that the smartphone is connected to the coffee shop inside the mall using Wi-Fi. What caused this connection?

- The Wi-Fi access point in the coffee shop uses WPA2 Personal settings.
- **The smartphone is set to automatically connect to available Wi-Fi networks.**
- The service carrier of the smartphone provides Wi-Fi connections inside the mall.
- The Wi-Fi access point in the coffee shop uses the same channel as the user smartphone uses.

Explanation: When a mobile device is set to automatically connect to unknown Wi-Fi networks, the device will search and connect to any open access Wi-Fi networks.

117. A programmer is building a script that will test a condition of either true or false. Which data type would the programmer use?

- float
- **Bool**
- int
- char

Explanation: The basic data types used in a script include:

- int represents integers
- char represents characters
- float represents decimal numbers
- strings represent alphanumeric characters
- Bool represents true or false

118. A user has a computer that is infected with spyware. What should be performed after the spyware is completely cleaned?

- Run Windows Update.
- Run a disk defragmentation.
- **Delete system restore files.**
- Create a full backup.

Explanation: An infected computer that performs a system restore will save the virus or spyware along with the restore point. Therefore, system restore files must be deleted after the removal of malware.

119. A technician calls the help desk with the following situation. “I am trying to save a file to my RAID drive but my system cannot find it.” What advice should the help desk agent give to the caller?

- Check the permissions for this file.
- Set the file permissions to read and execute.
- **Check the RAID controller, because it may need to be replaced.**
- Create a virtual machine with an OS that supports the application.

120. Which statement describes a primary partition?

- It is a section of an extended partition on an MBR. It can be used to separate information for administrative purposes.
- **It is a physical section of a hard disk. It can contain an operating system to boot the system and cannot be subdivided.**

- It is used to boot an operating system by default.
- It is often used to organize data storage by subdividing it into as many as 23 logical sections.

121. A support technician wants to upgrade a system to Windows 10 but is unsure whether the hardware and software on the existing system are compatible. What tool or utility would be the best choice for the user?

- Windows Easy Transfer
- **Get Windows 10 app**
- Cortana Virtual Assistant
- PCmover Express

122. A user is deleting old files and wants to see all files in the current directory. What is the best Windows command to select to do the job?

- **dir**
- exit
- bootrec
- ipconfig
- diskpart

123. A technician is troubleshooting a Windows 10 PC that has a .dll file for an application that has not been registered. Which administrative command-line tool or command can be used to address this?

- **regsvr32**
- net user
- type
- gpupdate

124. An IT technician in a service company has provided extensive remote IT support with product deployment for a customer. After the completion of the contract, a complaint is filed against the IT technician for not following company policy by sending unsolicited emails about services and products that are not related to the contract. What two things should the IT support technician have done differently? (Choose two.)

- The IT technician should have added the customer to a chain letter with many recipients instead.
- The IT technician should have used encryption to hide the purpose of the emails.
- **The IT technician should have researched the company policy about personal communication with customers on company time.**
- **The IT technician should have asked the customer if the customer was interested in receiving information regarding other new services and products.**
- The IT technician should have requested permission from a supervisor to send the customer emails.

Explanation: While working with customers both briefly and over an extended period of time, it is possible to form friendly relationships. It is important to always follow company policy and never send unsolicited messages to a customer. Also do not send unsolicited mass mailings or chain letters to customers from a company email address. Any personal relationships should

be kept via personal email accounts and should not reflect the IT organization of the employer.

125. A user finds that when launching a downloaded Windows update file, Windows Update fails. What are two possible causes for this? (Choose two.)

- **The downloaded update file is corrupted.**
- The virus definitions are out of date.
- The Windows Firewall is turned off.
- **A previous update that is required for the current update is not installed.**
- The hard disk is failing.

Explanation: In the event that the downloaded update file is corrupted or a previously required update was not installed, the Windows Update process will fail.

126. A server administrator needs to remotely configure a legacy network device. The legacy network device only supports a plain-text session connection. Which remote access tool should be used?

- SSH client
- Windows Remote Assistance client
- **Telnet client**
- Windows Remote Desktop client

Explanation: Legacy devices may not support remote access sessions that require encryption. These devices may rely on using plain-text sessions provided by the Telnet protocol on TCP port 23.

127. Which statement describes a logical drive?

- It takes the first 512 bytes on the disk and contains the boot loader, an executable program that allows a user to choose from multiple operating systems.
- It is a standard for the layout of the hard drive partition table using globally unique identifiers. All partitions are primary.
- **It is a section of an extended partition on an MBR. It can be used to separate information for administrative purposes.**
- It is a physical section of a hard disk. It can contain an operating system to boot the system and cannot be subdivided.

128. A technician wants to open a remote desktop utility to connect to a remote computer on a Windows 10 PC. Which administrative command-line tool or command can be used to address this?

- diskpart
- **mstsc**
- msinfo32
- chkdsk

129. A technician needs to capture the company user accounts, files, operating system settings, and application settings for migration into the new Windows 10 installation. What tool or utility would be the best choice for the user?

- **User State Migration Tool**
- Upgrade Assistant
- Windows Easy Transfer
- WinLoad

130. Which technology allows a mobile device to automatically rotate what is being displayed on the screen as the physical orientation of the device is changed?

- Time Machine
- **accelerometer**
- screen calibration
- geocaching

Explanation: An accelerometer allows the device to adapt based on the position of the device. This feature can be disabled or enabled through the Settings > Display option path.

131. After questioning a user about the problems being experienced with a PC operating system, the support technician suspects that a recent service pack installation has failed. Which step of the troubleshooting process has the technician just concluded?

- Test the theory to determine the cause of the problem.
- Establish a plan of action to resolve the problem.
- **Establish a theory of probable cause.**
- Document findings, actions, and outcomes.

Explanation: By suspecting that an operating system service pack has failed to install successfully, the technician has established a theory of probable cause of the problem. The next step would be to test the theory to determine the cause of the problem, followed by establishing a plan of action to resolve the problem. Documentation is the final step and would occur after the solution has been verified and the system restored to full functionality.

132. A new computer workstation has been installed in a small office. The user of the workstation can print a document using a network printer on the LAN, but cannot access the Internet. What is a possible cause of the problem?

- The TCP/IP stack is not functional.
- **The gateway IP address is misconfigured.**
- The DHCP server IP address is misconfigured.
- The workstation is configured with a static IP address.

Explanation: The fact that the workstation can print at a networked printer indicates that the TCP/IP stack is functional. However, that the workstation cannot communicate with external networks indicates that the most likely problem is the incorrect default gateway address. If the workstation is configured to obtain an IP address automatically, the DHCP server address does not need to be configured.

133. A customer is explaining a problem with a computer to a technician. The technician recognizes the problem prior to the customer finishing the explanation. What should the technician do?

- Interrupt the customer and let the customer know that the technician knows what the problem is.
- Start working on the PC while listening to the customer at the same time.
- Ask the customer to repeat the problem so that the technician can document it and verify all the facts.
- **Wait politely for the customer to finish explaining the problem.**

Explanation: It is always important to allow the customer to finish explaining the problem at hand. You should always be attentive and actively listen to the customer without interrupting and acknowledge the customer occasionally to affirm that you are actively listening to the customer.

134. A technician needs to permanently destroy data on some drives before disposing of them. What is the best way to do this?

- **Shatter the drive platters with a hammer.**
- Overwrite the drives
- Partition the hard drives.
- Perform a full format.

Explanation: The best way to permanently destroy data is by shattering the platters of the hard drives with a hammer.

135. A user notices errors for some Windows operations and suspects that some system files might be corrupted. The user wants to scan and verify the integrity of all system files and replace corrupted files with correct versions. What is the best Windows command to select to do the job?

- DISM
- tasklist
- **sfc**
- shutdown
- path

136. An analyst is running Windows 7 on the PC and is planning to migrate to Windows 8.1. The analyst wants help migrating the personal files and settings into the newer version. What tool or utility would be the best choice for the user?

- PCmover Express
- **Windows Easy Transfer**
- Application manager
- User State Migration Tool

137. Which statement describes a recovery partition?

- **It is a section of the disk, that is inaccessible to the user, containing an image that can be used to restore the computer to its original configuration.**
- It is often used to organize data storage by subdividing it into as many as 23 logical sections.

- It is used to boot an operating system by default.
- It is a physical section of a hard disk. It can contain an operating system to boot the system and cannot be subdivided.

138. An administrator calls the help desk with the following situation. "I need to make changes to a file. I can open it but I am unable to make changes." What advice should the help desk agent give to the caller?

- Create a virtual machine with an OS that supports the application.
- If using Windows, set the idle timeout and screen lock.
- Set the file permissions to read and execute.
- **Check the permissions for this file.**

139. What three technologies enable virtual assistants to interact with end users via voice commands? (Choose three.)

- VoIP
- multi-threading
- **machine learning**
- **voice recognition**
- data fault tolerance
- **artificial intelligence**

Explanation: A digital assistant, or virtual assistant, relies on artificial intelligence, machine learning, and voice recognition technology to understand conversational-style voice commands.

140. How can a user prevent specific applications from accessing a Windows computer over a network?

- Enable MAC address filtering.
- Disable automatic IP address assignment.
- **Block specific TCP or UDP ports in Windows Firewall.**
- Change default usernames and passwords.

Explanation: Network applications have specific TCP or UDP ports that can be left open or blocked in Windows Firewall. Disabling automatic IP address assignment may result in the computer not being able to connect to the network at all. Enabling MAC address filtering is not possible in Windows and would only block specific network hosts, not applications. Changing default usernames and passwords will secure the computer from unauthorized users, not from applications.

141. What is the most commonly used method to close an application that appears to be frozen on an OS X-based computer?

- **Use Force Quit.**
- Use Task Manager.
- Access the Status menu.
- Access the Notification Center.

Explanation: To use Force Quit, right-click on the application icon that is not responding from the Dock and close the application.

142. In the context of a Linux operating system, which command can be used to display the syntax and parameters for a specific command?

- cat
- **man**
- grep
- crontab

Explanation: The functions of listed CLI commands of a Linux system are as follows:

cat – lists the contents of a file

man – displays the documentation for a specific command

crontab – manages the cron service for scheduling system tasks

grep – searches for specific strings of characters within a file or other commands outputs

143. A system administrator issues the apt-get command on a laptop that has Ubuntu installed. What is the function provided by the command?

- to display or configure a wireless NIC
- **to install, configure, and remove packages**
- to list the applications currently running in the system
- to allow a user to login as another user or to become a super user

Explanation: The apt-get utility (also a command) is the Ubuntu Linux package manager. It is used to install, configure, and remove packages.

144. After consulting the manufacturer manuals, a technician applies a series of recommended solutions that resolve a problem with a workstation computer. What is the next step in the troubleshooting process that the technician should perform?

- **Verify the solution and confirm full system functionality.**
- Document the findings, actions, and outcomes.
- Test the theory of probable cause.
- Determine the next steps to resolve the problem.

Explanation: After the recommended solutions have been applied to resolve the problem, full system functionality should be verified and preventive measures implemented if applicable. This would be followed by documenting the solution and actions. Determining the next steps to resolve the problem and testing the theory of probable cause have already been completed in this scenario.

145. When a user tries to run a program a missing or corrupt DLL message is displayed. What are two possible solutions to this problem? (Choose two.)

- Reinstall the correct drivers.
- Use the msconfig command to adjust the startup settings for the program.
- Run Windows Startup Repair.
- **Run sfc/scannow in Safe Mode.**
- **Register the DLL file using the regsvr32 command.**

Explanation: Two possible solutions to a reported missing or corrupt are to register the DLL file using the `regsvr32` command or restart the computer in Safe Mode and run `sfc/scannow`. Windows Startup Repair is used solve

Windows startup problems. Adjusting the program startup settings by using `msconfig` is applicable only to programs that start correctly. Drivers relate to hardware, not to programs.

146. A support desk technician is asking a customer a series of questions about a problem connecting to the network. Which step of the troubleshooting process is the technician applying?

- **Identify the problem.**
- Establish a theory of probable cause.
- Establish a plan of action to resolve the problem.
- Test the theory to determine cause.

Explanation: Before any solutions can be proposed or tested, the problem must first be identified. This is done by gathering information from the customer by asking questions and clarifying details of the problem.

147. A computer technician has successfully returned a laptop to full operation and verified system functionality. Actions the technician performed included modifying the registry and applying patches to the operating systems. What is the next step in the troubleshooting process that the technician should do?

- Reboot the computer.
- **Document the solution.**
- Consult manufacturer manuals and repair logs.
- Re-attach and test all peripherals.

Explanation: The technician is ready to conclude the troubleshooting process by documenting the solution. The manufacturer manuals and repair logs would be consulted to establish a plan of action and resolve the problem before the solution has been applied. Rebooting the computer, and re-attaching and testing all peripherals, would occur during the testing and verification stage after the solution has been implemented.

148. A user reports that a computer is unable to print on an inkjet printer. The technician has determined that there is no paper in the paper bin. What is the next step in the troubleshooting process?

- **Establish a plan of action.**
- Determine the exact cause.
- Verify system functionality.
- Document the findings.

Explanation: What the technician just did was to determine the exact cause. What is next in the troubleshooting process is to establish a plan of action.

149. A Windows PC that was formatted with the NTFS file system displays a missing or corrupt DLL error message when a certain program is run. What is the cause of this?

- The DLL file was not installed with the program.
- The NTFS file system does not support DLLs.
- The OS must be 64 bit in order to support the DLL.

- **The DLL file was not registered during installation of the program.**

Explanation: Missing or corrupt DLL files can result when they are uninstalled in error when another program is being uninstalled or there is a failure in the registration process of the DLL during installation.

150. What are two possible symptoms of MBR/GPT corruption in a workstation? (Choose two.)

- The workstation continually restarts.
- **The workstation displays an “Invalid Boot Disk” error.**
- The workstation displays a black or blue screen of death.
- **The workstation displays a “BOOTMGR is missing” error.**
- The workstation displays an “Inaccessible Boot Device” error.

Explanation: When the MBR/GPT is corrupted, the workstation cannot identify the active partition in order to load a valid operating system. The error message “Inaccessible Boot Device” indicates that the active partition is determined. However, the device driver is incompatible with the boot controller or BOOTMGR is corrupted. The reason that a workstation continually restarts is probably that the workstation is set to restart when there is a failure or a startup file has become corrupted. The most likely reason for BSOD is an incompatible device driver or a hardware failure.

151. What is a result when the DHCP servers are not operational in a network?

- Workstations are assigned with the IP address 0.0.0.0.
- Workstations are assigned with the IP address 127.0.0.1.
- Workstations are assigned with IP addresses in the 10.0.0.0/8 network.
- **Workstations are assigned with IP addresses in the 169.254.0.0/16 network.**

Explanation: When workstations are configured with obtaining IP address automatically but DHCP servers are not available to respond to the requests, a workstation can assign itself an IP addresses from the 169.254.0.0/16 network.

152. A user reports that during the boot up process of a Windows 7 workstation, the message “MBR has been changed or modified” appears. What is the most probable cause of the message?

- A virus has damaged the MBR.
- A virus has damaged the boot sector.
- **A boot sector virus has changed the MBR.**
- A virus damaged the Windows system files.

Explanation: The change or modification of the MBR by a virus causes the system to display the message. A damaged MBR, damaged boot sector, and damaged Windows system files will cause different error messages to appear.

153. A user has completed a project and wants to erase or delete one or more files from a Windows directory. What is the best Windows command to select to do the job?

- bootrec
- **del**
- history
- diskpart
- ipconfig

154. A user calls the help desk with the following situation. "My Windows operating system is slowing down more and more each day and it now takes ages to load an application." What advice should the help desk agent give to the caller?

- Set the file permissions to read and execute.
- Create a virtual machine with an OS that supports the application.
- If using Windows, set the idle timeout and screen lock.
- **Use the Disk Defragmenter to remedy the problem.**

155. A user wants to display the contents of a text file in a command interpreter. Which administrative command-line tool or command can be used to address this?

- **type**
- net user
- robocopy
- gpupdate

156. A manager wants to install Windows 10 directly onto a computer and needs help with the setup process. What tool or utility would be the best choice for the user?

- **Upgrade Assistant**
- User State Migration Tool
- Windows Easy Transfer
- Windows Boot Manager

157. A user cannot reach a familiar web server and wants to verify connectivity by sending echo-request messages to the server in the hope that the server will respond to confirm connectivity. What is the best Windows command to select to do the job?

- sfc
- DISM
- recover
- tasklist
- **ping**

158. Which statement describes the globally unique identifier (GUID) partition table (GPT)?

- It is a section of an extended partition on an MBR. It can be used to separate information for administrative purposes.
- **It is a standard for the layout of the hard drive partition table using globally unique identifiers. All partitions are primary.**

- It is often used to organize data storage by subdividing it into as many as 23 logical sections.
- It is used to boot an operating system by default.

159. A user is trying to repair, prepare, and fix Windows images and the recovery image within an installation of the operating system. What is the best Windows command to select to do the job?

- path
- format
- **DISM**
- bootrec
- diskpart

160. A technician calls the help desk with the following situation. “I installed a new sound card but it is not working correctly.” What advice should the help desk agent give to the caller?

- Set the file permissions to read and execute.
- **Use Device Manager to look for any driver issues or problems.**
- Check the permissions for this file.
- Create a virtual machine with an OS that supports the application.

161. Which statement describes formatting?

- **It is a process to create a file system in a partition or volume for file storage.**
- It is often used to organize data storage by subdividing it into as many as 23 logical sections.
- It is a section of an extended partition on an MBR. It can be used to separate information for administrative purposes.
- It is a section of the disk, that is inaccessible to the user, containing an image that can be used to restore the computer to its original configuration.

162. Which two statements are true regarding GPT partitions? (Choose two.)

- **They are commonly used in computers with UEFI firmware.**
- They are commonly used in computers with BIOS based firmware.
- **They store a backup of the partition table.**
- They have a maximum partition size of 2TB.
- They store the partition and boot data in one place.

Explanation: GPT partitions are commonly used in computers with UEFI firmware. They store a backup of the partition table and can support up to 128 partitions. The maximum partition size is 9.4ZB.

163. A technician wants to open up a separate command interpreter with commands for working with disk partitions. Which administrative command-line tool or command can be used to address this?

- chkdsk
- mstsc
- **diskpart**
- msinfo32

164. Which statement describes a dynamic disk?

- It is a standard for the layout of the hard drive partition table using globally unique identifiers. All partitions are primary.
- It is often used to organize data storage by subdividing it into as many as 23 logical sections.
- **It is a type of disk with the ability to create volumes that span across more than one disk even if the unallocated space is noncontiguous.**
- It takes the first 512 bytes on the disk and contains the boot loader, an executable program that allows a user to choose from multiple operating systems.

Explanation: A dynamic disk has the ability to create volumes that span across more than one disk. The size of the partitions can be changed after they have been set, even if the unallocated space is noncontiguous. However, the partition size cannot be reduced without loss of data.

165. An administrator calls the help desk with the following situation. “I need to use an application that is not supported by Windows on my PC.” What advice should the help desk agent give to the caller?

- **Create a virtual machine with an OS that supports the application.**
- Check the permissions for this file.
- If using Windows, set the idle timeout and screen lock.
- Set the file permissions to read and execute.

166. A user wants to check a file system for errors, including errors with physical media. Which administrative command-line tool or command can be used to address this?

- **chkdsk**
- type
- net user
- robocopy

167. An administrator calls the help desk with the following situation. “An application on my computer is not responding and it is slowing down other applications. What should I do?” What advice should the help desk agent give to the caller?

- Create a virtual machine with an OS that supports the application.
- Check the permissions for this file.
- **Use Task Manager to release system resources from the unresponsive application.**
- Set the file permissions to read and execute.

168. A user suspects issues with the MBR and is trying to repair it. What is the best Windows command to select to do the job?

- net user
- format
- **diskpart**
- bootrec
- ipconfig

169. A technician wants to copy files and entire directory trees from one volume to another volume on a Windows 10 PC. Which administrative command-line tool or command can be used to address this?

- type
- gpupdate
- net user
- **robocopy**

170. A user wants to display the Group Policy settings that are in effect for a currently logged in user. Which administrative command-line tool or command can be used to address this?

- msinfo32
- mstsc
- diskpart
- **gpresult**

171. A user calls the help desk with the following situation. “I was updating my operating system software and the power went out before it finished. My PC terminates before the boot process is complete.” What advice should the help desk agent give to the caller?

- Set the file permissions to read and execute.
- **Press F8 during the boot process to use the last known good configuration.**
- If using Windows, set the idle timeout and screen lock.
- Create a virtual machine with an OS that supports the application.

172. A user wants to copy a directory with all files and a subdirectory in it from one Windows directory to another. What is the best Windows command to select to do the job?

- ipconfig
- net use
- diskpart
- **xcopy**
- bootrec

173. What does the activation of the Offline Files feature in the Sync Center do in Windows 10?

- It sets up manual synchronization.
- It sets up synchronization to occur automatically.
- It sets up a sync partnership with the networked file location.
- **It sets up a local file location that will store the files to be synchronized.**

Explanation: Using Sync Center requires activation of the Offline Files feature. This sets up a local file location that will store the files to be synchronized. It also requires you to set up a sync partnership with the networked file location. Files can be synchronized manually and synchronization can also be scheduled to occur automatically.

174. What is the default file system used during a fresh installation of Windows 10?

- HPFS
- **NTFS**
- FAT16
- FAT32

Explanation: The default file system for a Windows 10 installation is NTFS.

175. A user visits a trusted website. The website sends the user a link via email to the default browser window. When the user clicks on the link, a message appears stating that there is a problem with the website's security certificate. Why has this occurred?

- the browser has identified it as a malware
- **the CRLs of the browser have not been updated**
- the antivirus has flagged this as a known virus
- the pop-up windows on the browser have been disabled

Explanation: Certificate authorities (CAs) issue certificates to domains that contain a public key so that the CA that issued the certificate can validate it because they signed it. The browser can provide the information associated with the certificate when a site is using HTTPS. A certificate error can be addressed by updating the certificate store for the respective browser.

176. Match the Windows 10 drive management condition with the respective description.



a basic disk that is being converted into a dynamic disk

Initializing

I/O errors detected on a dynamic disk

Online (Errors)

a volume that is functioning properly

Healthy

a dynamic disk that has been moved to a computer from another computer running Windows

Foreign

a basic or dynamic disk that has experienced hardware failure, corruption, or I/O errors

Unreadable

a dynamic disk that is corrupted, turned off, or disconnected

Missing

a dynamic disk that is corrupted or unavailable

Offline

a disk that does not contain a valid signature

Not Initialized

177. What are two advantages of SD-WAN technologies over traditional WAN? (Choose two.)

- **network consistency and reliability**
- independently configured devices instead of centrally
- required to activate platform as a service (PaaS)
- network monitoring and management is not required
- **integrated and automated network security features**

Explanation: SD-WAN technologies offer network consistency and reliability and integrated automated network security features such as built-in firewalls, encryption, sandboxing, and IPS. With SD-WAN, the WAN devices are configured centrally, unlike traditional WAN devices configured independently. PaaS can be implemented on both SD-WANs and traditional WANs. Best practice requires network monitoring and management, which SD-WAN facilitates.

178. A technician has just purchased a new Windows 10 PC and wants to transfer selected files, folders, profiles, and applications from the old Windows PC. What tool or utility does Microsoft recommend to do this?

- Upgrade Assistant
- **PCmover Express**
- User State Migration Tool
- Windows Task Manager

Explanation: PCmover Express is the software tool recommended by Microsoft to automatically moves files, settings, and user profiles from an old PC to a new one. The free version is no longer available, and there is a cost to use it from LapLink.

179. A technician wishes to start Windows 10 in safe mode to troubleshoot it. What key or key combination would begin this process?

- ctrl + F6 and restart
- **hold the Shift key and select the Restart option in the Power menu**
- recycle power and hold down the del key
- recycle power and hold down the F8 key

Explanation: Hold the Shift key and select the Restart option in the Power menu. This will display the Choose an Option screen. To get the startup settings, select Troubleshoot, then from the next screen, select Advanced options. Inside Advanced options, select Startup settings, then on the next screen, select Restart. The computer will then restart and display the Startup Settings menu from which you can select enable Safe Mode.

180. A user signs up on an application that requires multifactor authentication. The user chooses to register the phone number for the authentication system. Which three items must the user provide in order to authenticate? (Choose three.)

- answer to secret question
- IP address
- **account username**

- **OTP**
- email address
- **password**

Explanation: Authenticator applications have become a popular method for multifactor authentication. An authenticator application sends a code called a one-time password (OTP) to the registered phone or email address to access the service. To authenticate, the user must supply their account username and password plus the OTP code.

181. Which two statements are true regarding 64-bit processor architecture? (Choose two.)

- **It has additional registers for 64-bit address space.**
- It only supports 64-bit operating systems.
- It supports a maximum of 4GB RAM memory.
- **It supports both 32-bit and 64-bit operating systems.**
- It has only 64-bit registers.

Explanation: The 64-bit processor architecture contains additional 64-bit registers to support 64-bit address space. This allows it to run both 32-bit and 64-bit operating systems and applications.

182. Which process in Windows 10 is responsible for assigning system resources and driver installation?

- winlogon
- **PnP**
- services
- explorer

Explanation: The PnP (Plug and Play) process is responsible for the assignment of system resources and driver installation in Windows 10.

183. What is the purpose of Windows 10 ReadyBoost?

- It speeds up the Windows 10 start time.
- It enables the quadruple channels on a 64-bit processor.
- It enables the UEFI bios to boot faster.
- **It enables Windows to treat an external flash device, such as a USB drive, as a hard drive cache.**

Explanation: Another form of virtual memory is using an external flash device and Windows ReadyBoost to enhance system performance. Windows 10 ReadyBoost enables Windows 10 to treat an external flash device, such as a USB drive, as a hard drive cache.

184. A technician calls the help desk with the following situation. "I added a new PC to my LAN. I can ping other devices on my LAN but not any remote devices." What advice should the help desk agent give to the caller?

- **Check the IP address configuration on the new PC, because the default gateway may be incorrect.**
- Create a virtual machine with an OS that supports the application.
- Set the file permissions to read and execute.
- If using Windows, set the idle timeout and screen lock.

185. Where are 32-bit program files located in a 64-bit version of Windows 10 Pro?

- c:\Program files
- **c:\Program files (x86)**
- c:\users
- c:\Windows\system32

Explanation:In a Windows 10 64-bit operating system, 32-bit program files are located in the c:\programs (x86) folder, while 64-bit programs are located in the c:\Programs folder.

186. A technician wishes to use the reset option to repair a Windows 10 installation and chooses the option that will retain the user's personal files. Which statement is true based on using this option?

- All user files and applications will be restored together with the complete reinstallation of Windows 10.
- All user files and applications will be deleted, and a complete reinstallation of Windows 10 will occur.
- Only corrupt files of the Windows 10 installation will be replaced and repaired.
- **Only user files will be restored together with the complete reinstallation of Windows 10.**

Explanation:By using the reset process from within the recovery area, it will remove all apps and programs, change the computer's settings back to their defaults, and reinstall Windows 10 without removing any user personal data files.

187. A user notices that the PC behaves a bit differently from the organization group policies. The user believes that the group policy settings may have been applied incorrectly and wants to verify the settings. What is the best Windows command to select to do the job?

- sfc
- cls
- **gpresult**
- DISM
- tasklist