

CompTIA

A+ CORE 1

220-1101

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CompTIA A+ 220-1101 (Core 1) Practice Tests 2020®

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CONTENTS AT A GLANCE



Contents at a glance.....	4
Introduction	5
Chapter 1 Mobile Devices.....	10
Questions 1-20	10
Answers 1-35.....	22
Chapter 2 Networking.....	55
Questions 21-40	55
Answers 21-40	66
Chapter 3 Hardware	103
Questions 41-60	103
Answers 41-60	114
Chapter 4 Virtualization and Cloud Computing	148
Questions 61-70	148
Answers 61-70	153
Chapter 5 Hardware and Network Troubleshooting.....	168
Questions 71-90	168
Answers 71-90	181
THE END	206

INTRODUCTION

CompTIA A+ certified professionals are proven problem solvers. They support today's core technologies from security to cloud to data management and more. CompTIA A+ is the industry standard for launching IT careers into today's digital world.

About This Book

CompTIA A+ Core 220-1001 Practice Tests 2020 by Examsdigest is designed to be a practical practice exam guide that will help you prepare for the CompTIA A+ Core 220-1001 exams. As the book title says, it includes 110+ questions so that you can prepare for the final exam.

This book has been designed to help you prepare for the style of questions you will receive on the CompTIA A+ Core 220-1001 exams. It also helps you understand the topics you can expect to be tested on for each exam.

In order to properly prepare for the CompTIA A+ Core 220-1001, I recommend that you:

✓ **Review a reference book:** CompTIA A+ Core 220-1001 by Examsdigest is designed to give you sample questions to help you prepare for the style of questions you will receive on the real certification exam. However, it is not a reference book that teaches the concepts in detail. That said, I recommend that you review a reference book before attacking these questions so that the theory is fresh in your mind.

✓ **Do practice test questions:** After you review a reference book and perform some hands-on work, attack the questions in this book to get you "exam ready"! Also claim your free 1-month access on our platform to dive into to more questions, flashcards and much much more.

Beyond The Book

This book gives you plenty of CompTIA A+ Core 220-1001 questions to work on, but maybe you want to track your progress as you tackle the questions, or maybe you're having trouble with certain types of questions and wish they were all presented in one place where you could methodically make your way through them. You're in luck.

Your book purchase comes with a free one-month subscription to all practice questions online and more. You get on-the-go

access any way you want it — from your computer, smart-phone, or tablet. Track your progress and view personalized reports that show where you need to study the most. Study what, where, when, and how you want!

What you'll find online

The online practice that comes free with this book offers you the same questions and answers that are available here and more (PBQs questions).

The beauty of the online questions is that you can customize your online practice to focus on the topic areas that give you the most trouble.

So if you need help with the domain Hardware, then select questions related to this topic online and start practicing.

Whether you practice a few hundred problems in one sitting or a couple dozen, and whether you focus on a few types of problems or practice every type, the online program keeps track of the questions you get right and wrong so that you can monitor your progress and spend time studying exactly what you need.

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info@examsgdigest.com to claim access on our platform. Once we confirm the purchase you can enjoy your free access.

CompTIA A+ Core 220-1001 Exam Details

The online practice that comes free with this book offers you the same questions and answers that are available here and more.

✓ **Format** - Multiple choice questions (single and multiple response), drag and drops and performance-based

✓ **Type** - Associate

✓ **Time** - 90 minutes to complete the exam

✓ **Cost** - \$226

✓ **Language** - English at launch. German, Japanese, Portuguese, Thai and Spanish

Exam Content

Content Outline

CompTIA A+ Core 1 measures the necessary skills for an entry-level IT professional. Successful candidates will have the knowledge required to:

- Assemble components based on customer requirements
- Install, configure, and maintain PCs, mobile devices, and software for end users
- Understand the basics of networking and security forensics
- Properly and safely diagnose, resolve, and document common hardware and software issues
- Apply troubleshooting skills
- Provide appropriate customer support
- Understand the basics of scripting, virtualization, desktop imaging, and deployment

The table below lists the domains measured by this examination and the extent to which they are represented:

1.0: Mobile Devices (14%)

2.0: Networking (20%)

3.0: Hardware (27%)

4.0: Virtualization and Cloud Computing (12%)

5.0: Hardware and Network Troubleshooting (27%)

CHAPTER 1

MOBILE DEVICES

Questions 1-20

Question 1. You have recently upgraded to Windows 10 and installed some heavy-weight software. After the upgrade and the installation of the software your laptop started running slowly due to the increased memory requirements. You decide to install more RAM to speed up the laptop. Which of the following should you install to increase the performance of the laptop?

- (A) DIMM
- (B) SO-DIMM
- (C) DDR4
- (D) DDR3

Question 2. You just bought a new Oculus Virtual Reality (VR) headset to use with your PC. After trying to connect the headset you realized that it doesn't work as expected. To ensure your PC is ready to support the new VR games, which of the following should you install?

- (A) A dedicated graphic card
- (B) A new network interface controller
- (C) An external wi-fi antenna
- (D) An SSD disk

Question 3. You have been tasked to provide a solution to your co-workers who want to be able to quickly connect a larger external monitor, keyboard, and mouse to their laptop through a single USB port to perform additional work on the larger screen. Which type of device should you choose to provide all the functionality above?

- (A) Digitizer
- (B) Port replicator
- (C) Inverter
- (D) WiFi Connector

Question 4. Your co-worker Lisa, came to you to ask for your help. She says that she can't connect to the internet even if she has data, and she can't make/receive calls. She thinks that the phone was hacked. After a quick investigation, you notice that the rest functionalities are fine such as playing music, open the calendar, add new contacts etc...Which of the following is MOST likely the problem with Lisa's phone?

- (A) The airplane mode is enabled
- (B) The battery of the phone needs replacement
- (C) The microSD is broken
- (D) The data sync between Lisa's phone and her cloud-provider is still in progress

Question 5. In many places around the world, contactless payments have become commonplace. What type of technology does this most likely rely on?

- (A) Tethering
- (B) NFC
- (C) Lightning
- (D) Bluetooth

Question 6. Which of the following technologies can produce some of the best picture quality of any display technology?

- (A)** LCD
- (B)** Dual displays
- (C)** OLED
- (D)** Screen brightness

Question 7. Which of the following technologies is a navigation system using satellites, a receiver and algorithms to synchronize location, velocity and time data for air, sea and land and helps you get where you are going, from point A to point B?

- (A)** Smart watches
- (B)** GPS
- (C)** E-readers
- (D)** VR headset

Question 8. Which of the following terms is used in the general sense to describe any conversion of analog information such as text, image, or sound into a digital format for storage, transmission, and computer processing?

- (A) Inverter
- (B) LCD
- (C) IMSI
- (D) Digitizer

Question 9. You have been tasked to create an easy and efficient solution for the door-to-door salespeople of your company, to quickly connect an external monitor, keyboard, mouse, a wired network connection, and an additional hard drive for storage to the HP laptop whenever they come back into the office. Which of the following type of device should you choose to provide all the functionality above and complete the task?

- (A) Port replicator
- (B) Docking station
- (C) Laptop lock
- (D) Optical drive

Question 10. Your phone has run out of data and you need to connect on the web. Unfortunately, there are no Wi-Fi hotspots around you. Your friend told you he can share his own mobile data in order to connect on the web. Which feature does he need to enable in order to share his internet connection with you?

- (A) Bluetooth
- (B) Hotspot
- (C) NFC
- (D) Airplane mode

Question 11. After coming back home from a long trip you noticed that the photos and video of your journey made your phone run out of space. Which of the following actions should you perform in order to increase the amount of memory space of your phone without losing any photo or video?

- (A) Get new game pads
- (B) Get a new headset
- (C) Get a new microSD
- (D) Get a new speaker

Question 12. You have just realized that you lost the charging cable of your iPhone 8. Now you are heading to the Apple store to buy a new one, as the battery of your phone is running low. What sort of cable do you need to charge your phone?

- (A) Micro USB
- (B) USB-C
- (C) Mini USB
- (D) Lightning

Question 13. You have just bought a new wireless headphone and you want to connect the headphones with your smartphone to listen to music and make and receive calls. Which of the following actions should you execute to connect your smartphone to the wireless headphones?

- (A) Enable Bluetooth
- (B) Enable pairing
- (C) Enable Wi-Fi
- (D) Enable tethering

Question 14. Your co-worker just got a new Android phone from the company. He has been tasked to migrate all of his phone's existing business-related contacts from the current phone (iPhone) to the new phone (Android). His phone had been configured to keep all of his business-related contacts to the company's on-premise cloud-based service. Your co-worker came to you to guide him on how to complete this task. Which of the following is the BEST and most EFFICIENT way for your co-worker to migrate his data from his old iPhone to his new Android device?

- (A)** Your co-worker should create a wireless Bluetooth connection between the iPhone and the Android devices and use it to copy his contacts to the new device
- (B)** Your co-worker should migrate all of the contacts manually to avoid losing any of his contacts
- (C)** Your co-worker should log into his corporate email account on the new Android phone and restore his contacts to the new device
- (D)** Your co-worker should perform a backup and export his contacts from his iPhone to his PC and then import the contacts from his PC to his new Android device

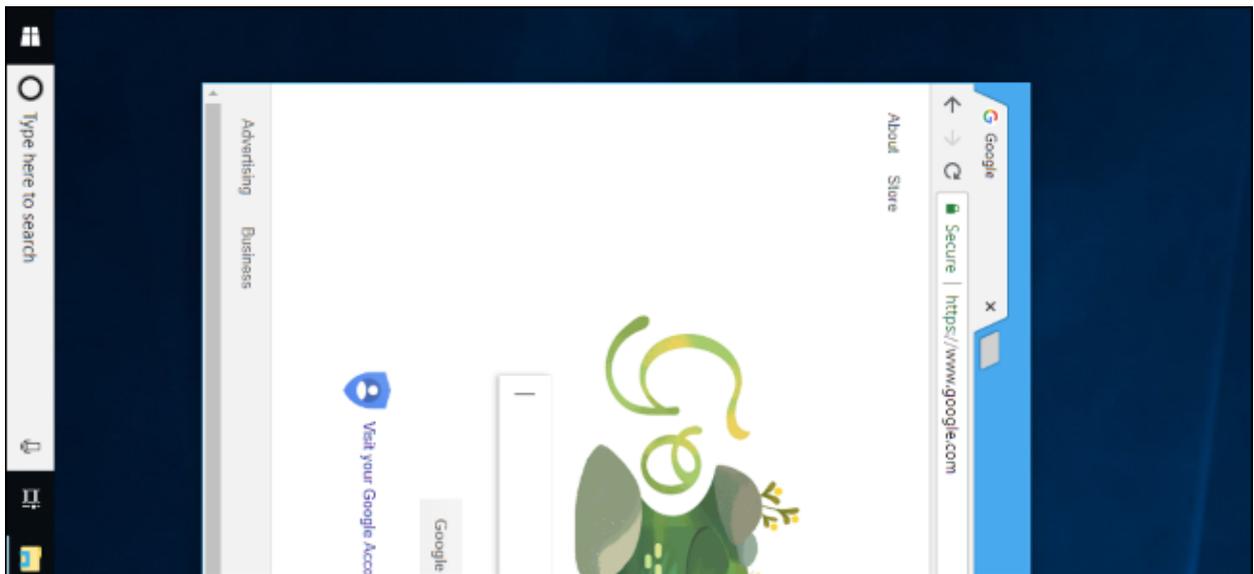
Question 15. Your mobile data on your phone is enabled and you are browsing the web, watching videos on Youtube. Suddenly you enable the airplane mode and the internet connection was lost. Which of the following signals being disabled by airplane mode? (Choose all that apply)

- (A) Cellular
- (B) NFC
- (C) VPN
- (D) Bluetooth
- (E) SSO

Question 16. You have been hired as a 1st line support engineer and your day-to-day duties include solving problems at the first point of contact so that the customer can continue with their day. Today you receive a call from a customer that needs help related to email synchronization. He wants that each time he receives an email, the email should be synchronised across all devices. Which of the following protocol should you use to make that happen?

- (A) SMTP
- (B) POP3
- (C) IMAP
- (D) S/MIME

Question 17. Your co-worker complains that his laptop has a screen image that is being displayed with a wrong orientation as the screenshot below. What is the BEST method to fix this issue?



- (A) Change monitor
- (B) Re-install the Windows
- (C) Rotating the screen
- (D) Update the display drivers

Question 18. Your friend came to you to provide him a solution to his problem. He needs a device that allows him to see his email notifications and instant messages from Messenger and WhatsApp on the go. Which of the following devices would you recommend to your friend?

- (A) Smartwatch
- (B) Fitness monitors
- (C) VR headsets
- (D) E-readers

Question 19. You have been hired as a network technician to install, maintain, and troubleshoot wireless connections. Your task is to find out which of the following types of wireless connections requires a pin to be entered as part of the pairing process prior to it being utilized?

- (A) NFC
- (B) Bluetooth
- (C) IR
- (D) Hotspot

Question 20. The laptop from your co-worker has stopped working, it does not power on or respond to any action. During the troubleshooting process, you have realized that the motherboard has failed and needs to be replaced. In the meantime, your co-worker needs to get some of his PowerPoint documents from the laptop because tomorrow he has a product presentation. Which of the following actions should you perform to give your co-worker access to the files he needs for his presentation?

- (A)** Remove the hard drive from the laptop and then install it as the primary hard drive in your desktop computer in order to get the PowerPoint
- (B)** Remove the hard drive from your co-worker's laptop, place it in an external USB enclosure, and connect it as a secondary drive to your desktop computer in order to get the PowerPoint
- (C)** Try to fix the motherboard
- (D)** Replace the hard drive from the laptop with an SSD disk

Answers 1-35

Question 1. You have recently upgraded to Windows 10 and installed some heavy-weight software. After the upgrade and the installation of the software your laptop started running slowly due to the increased memory requirements. You decide to install more RAM to speed up the laptop. Which of the following should you install to increase the performance of the laptop?

- (A) DIMM
- (B) SO-DIMM**
- (C) DDR4
- (D) DDR3

Explanation 1. **SO-DIMM is the correct answer.** SO-DIMM stands for "Small Outline Dual In-Line Memory Module." With laptops, the size of the memory modules matters significantly. Because laptops are designed to be as small and as light as possible, the size of each component matters. In fact, laptop parts are so crammed together, large RAM chips often do not fit into the overall laptop design. This is why SO-DIMMs were created.

DIMM is incorrect. DIMMs are used in desktop computers and servers. A DIMM (133MM) is about twice as long as a SODIMM (67MM).

DDR4 is incorrect. Double Data Rate 4 (DDR4) is the fourth generation of DDR RAM. DDR4 is designed to replace DDR3, the previous DDR standard. Advantages include faster data transfer rates and larger capacities, thanks to greater memory density and more memory banks.

Faster speeds and increased memory bandwidth allow DDR4 SDRAM to keep up with modern processors, including multi-core CPUs. This prevents the memory from being a bottleneck as processing speeds and bus speeds increase.

DDR3 is incorrect because this type of RAM is outdated and it has been replaced by the DDR4.

Question 2. You just bought a new Oculus Virtual Reality (VR) headset to use with your PC. After trying to connect the headset you realized that it doesn't work as expected. To ensure your PC is ready to support the new VR games, which of the following should you install?

- (A) A dedicated graphic card**
- (B)** A new network interface controller
- (C)** An external wi-fi antenna
- (D)** An SSD disk

Explanation 2. **A dedicated graphic card is the correct answer.** Virtual Reality (VR) requires a fast processor, lots of memory, and, most importantly, a dedicated graphics card. In order to have a smooth experience with VR, you need to ensure you have a high-end dedicated graphics card.

The rest options are incorrect because none of these actions can make your PC ready to support the new VR games. The only thing you need to install is a dedicated graphic card.

Question 3. You have been tasked to provide a solution to your co-workers who want to be able to quickly connect a larger external monitor, keyboard, and mouse to their laptop through a single USB port to perform additional work on the larger screen. Which type of device should you choose to provide all the functionality above?

- (A) Digitizer
- (B) Port replicator**
- (C) Inverter
- (D) WiFi Connector

Explanation 3. Port replicator is the correct answer. A Port replicator is a device used to quickly connect multiple peripherals to a laptop. The monitor, printer, network, keyboard and mouse are permanently plugged into the port replicator, which connects to the laptop via the USB port.

A port replicator provides some or all of the functionality of a docking station, and the two terms are used interchangeably. However, a docking station uses a proprietary connector to the computer, whereas a port replicator generally provides a universal solution for all laptops via USB.

Digitizer is incorrect. The term digitization has long been used in the general sense to describe any conversion of analog information such as text, image or sound into a digital format for storage, transmission and computer processing.

Inverter is incorrect. An inverter converts the DC voltage to an AC voltage. In most cases, the input DC voltage is usually lower while the output AC is equal to the grid supply voltage of either 120 volts, or 240 Volts depending on the country. The inverter may be built as standalone equipment for applications such as solar power, or to work as a backup power supply from batteries which are charged separately.

WiFi Connector is incorrect. WiFi Connectors, are the antenna / RF connection, that goes between a WiFi Access Point, Router, Client or other WiFi device with an external antenna, and with the proper WiFi Cable, allows you to install a low loss cable between your WiFi device and your antenna.

Question 4. Your co-worker Lisa, came to you to ask for your help. She says that she can't connect to the internet even if she has data, and she can't make/receive calls. She thinks that the phone was hacked. After a quick investigation, you notice that the rest functionalities are fine such as playing music, open the calendar, add new contacts etc...Which of the following is MOST likely the problem with Lisa's phone?

- (A) The airplane mode is enabled**
- (B)** The battery of the phone needs replacement
- (C)** The microSD is broken
- (D)** The data sync between Lisa's phone and her cloud-provider is still in progress

Explanation 4. The airplane mode is enabled is the correct answer. If the smartphone is functioning properly except for applications that require network connectivity, then the issue is either a misconfiguration (like enabling airplane mode by mistake), a defective cellular radio chip, or a similar issue. The most likely cause is that Lisa accidentally enabled the airplane mode on the device, which will turn off the cellular radio for the smartphone and cause the network connectivity to be lost.

The battery of the phone needs replacement is incorrect. This can't be the issue because the phone is functioning properly and the issue is related to network connectivity.

MicroSD is incorrect. A microSD card is a removable memory card that's inserted into your device that increases the amount of memory space it has. It has nothing to do with network connectivity issues.

The data sync between Lisa's phone and her cloud-provider is still in progress is incorrect. This can't be the issue because the data sync can't affect the internet connection. Moreover, the data sync requires an internet connection to be completed.

Question 5. In many places around the world, contactless payments have become commonplace. What type of technology does this most likely rely on?

- (A) Tethering
- (B) NFC**
- (C) Lightning
- (D) Bluetooth

Explanation 5. NFC is the correct answer. NFC stands for "Near Field Communication" and, as the name implies, it enables short-range communication between compatible devices. This requires at least one transmitting device, and another to receive the signal.

Another use case of NFC is to transfer files from one device to another.

Tethering is incorrect. Tethering is a technology that uses your phone or another data-enabled device as a modem or router so that you can access the internet with devices that aren't able to, such as your tablet or laptop.

Lightning is incorrect. Lightning is a proprietary computer bus and power connector created and designed by Apple. The Lightning connector is used to connect Apple mobile devices like iPhones, iPads, and iPods to host computers, external monitors, cameras, USB battery chargers, and other peripherals.

Bluetooth is incorrect. Bluetooth is a wireless technology standard used for exchanging data between fixed and mobile devices over short distances.

Question 6. Which of the following technologies can produce some of the best picture quality of any display technology?

- (A) LCD
- (B) Dual displays
- (C) **OLED**
- (D) Screen brightness

Explanation 6. OLED is enabled is the correct

answer. OLED, or organic light-emitting diodes, can produce some of the best picture quality of any display technology. The vast majority are LCD, and only some more recent TVs from LG and Sony are OLED. While LCD may be the norm, OLED TVs offer better picture quality overall, though at a higher price.

LCD is incorrect because it doesn't produce the best picture quality.

Dual displays is incorrect because is the use of multiple physical display devices, such as monitors, televisions, and projectors, in order to increase the area available for computer programs running on a single computer system.

Screen brightness is incorrect because is a way to adjust the brightness of your monitor screen.

Question 7. Which of the following technologies is a navigation system using satellites, a receiver and algorithms to synchronize location, velocity and time data for air, sea and land and helps you get where you are going, from point A to point B?

(A) Smart watches

(B) **GPS**

(C) E-readers

(D) VR headset

Explanation 7. GPS is the correct answer. GPS, or the Global Positioning System, is a global navigation satellite system that provides location, velocity and time synchronization.

GPS is everywhere. You can find GPS systems in your car, your smartphone and your watch. GPS helps you get where you are going, from point A to point B.

GPS is made up of three different components, called segments, that work together to provide location information.

The three segments of GPS are:

1. Space (Satellites) — The satellites circling the Earth, transmitting signals to users on geographical position and time of day.

2. Ground control — The **Control Segment** is made up of Earth-based monitor stations, master control stations and

ground antenna. Control activities include tracking and operating the satellites in space and monitoring transmissions. There are monitoring stations on almost every continent in the world, including North and South America, Africa, Europe, Asia and Australia.

3. User equipment — GPS receivers and transmitters including items like watches, smartphones and telematic devices.

Smartwatch is incorrect. A smartwatch is a portable device that's designed to be worn on a wrist. Smartwatches—like smartphones—use touchscreens, offer apps, and often record your heart rate and other vital signs.

Most smartwatches—whether they're intended for daily use (as with the Apple Watch) or for specific purposes (as with the Garmin Fenix)—offer a suite of standard features:

1. **Notifications:** Smartphones display notifications to alert you of important events or activities.
2. **Apps:** Beyond displaying notifications from your phone, a smartwatch is only as good as the apps it supports.
3. **GPS:** Most smartwatches include a GPS for tracking your location or receiving location-specific alerts.

E-readers is incorrect. An e-reader (electronic reader) is a device for reading content, such as e-books, newspapers and documents.

VR headsets is incorrect. A virtual reality (VR) headset is a head-mounted device that provides virtual reality for the wearer. Virtual reality headsets are widely used with video games but they are also used in other applications, including simulators and trainers.

Question 8. Which of the following terms is used in the general sense to describe any conversion of analog information such as text, image, or sound into a digital format for storage, transmission, and computer processing?

- (A) Inverter
- (B) LCD
- (C) IMSI
- (D) Digitizer**

Explanation 8. **Digitizer is the correct answer.** The term digitization has long been used in the general sense to describe any conversion of analog information such as text, image or sound into a digital format for storage, transmission and computer processing.

In this sense, a digitizer is any device that performs digitization, such as an image scanner. However, the introduction of the computer tablet and smartphone has led to a more specialized use of the term digitizer to describe devices that work in conjunction with touch screens.

Inverter is incorrect. An inverter converts the DC voltage to an AC voltage. In most cases, the input DC voltage is usually lower while the output AC is equal to the grid supply voltage of either 120 volts, or 240 Volts depending on the country. The inverter may be built as standalone equipment for applications such as solar power, or to work as a backup power supply from batteries which are charged separately.

LCD is incorrect. LCD (Liquid Crystal Display) is a type of flat panel display that uses liquid crystals in its primary form of operation. LCDs were a big leap in terms of the technology they replaced, which include a light-emitting diode (LED) and gas-plasma displays.

IMSI is incorrect. The IMSI (International Mobile Subscriber Identity) is a code used by the phone company to identify the SIM on the mobile network.

Question 9. You have been tasked to create an easy and efficient solution for the door-to-door salespeople of your company, to quickly connect an external monitor, keyboard, mouse, a wired network connection, and an additional hard drive for storage to the HP laptop whenever they come back into the office. Which of the following type of device should you choose to provide all the functionality above and complete the task?

- (A) Port replicator
- (B) Docking station**
- (C) Laptop lock
- (D) Optical drive

Explanation 9. Docking station is the correct

answer. Docking stations for laptops are meant to bridge the gap between portability and having a stationary place to work and play.

With a docking station, you can get the best of both worlds with a system that allows your laptop to work for both purposes.

The docking station itself is usually pretty small and doesn't take up much space, which can be great if you don't have much room on your desk. Some of the most basic docking stations provide a power supply and ports for connecting to other devices.

More advanced docking stations may include space for additional PC monitors, keyboards, and computer speakers. It can also have additional USB-C ports to connect to printers, add external hard drives, and connect microphones and audio.



Port replicator is incorrect. A port replicator provides some or all of the functionality of a docking station, and the two terms are used interchangeably. However, a docking station uses a proprietary connector to the computer, whereas a port replicator generally provides a universal solution for all laptops via USB.

Laptop lock is incorrect. As the name suggests, a laptop lock looks like a physical lock that helps in securing your laptop. The laptop lock works similarly to the physical lock. For using the laptop lock, you need to insert it in the universal slot of the laptop, and it is ready for use.

Optical drive is incorrect. An Optical Drive refers to a computer system that allows users to use DVDs, CDs and Blu-ray optical drives.

Question 10. Your phone has run out of data and you need to connect on the web. Unfortunately, there are no Wi-Fi hotspots around you. Your friend told you he can share his own mobile data in order to connect on the web. Which feature does he need to enable in order to share his internet connection with you?

- (A) Bluetooth
- (B) Hotspot**
- (C) NFC
- (D) Airplane mode

Explanation 10. Hotspot is the correct answer. You can use your phone's mobile data to connect another phone, tablet, or computer to the internet. Sharing a connection this way is called tethering or using a **hotspot**.

Bluetooth is incorrect. Bluetooth is a wireless technology standard used for exchanging data between fixed and mobile devices over short distances.

NFC is incorrect. NFC stands for “Near Field Communication” and, as the name implies, it enables short-range communication between compatible devices. This requires at least one transmitting device, and another to receive the signal. NFC is used for contactless payments and files transferring between devices.

Airplane mode is incorrect. Airplane mode disables a device’s cellular radio, Wi-Fi, and Bluetooth—all the wireless transmission functions.

Question 11. After coming back home from a long trip you noticed that the photos and video of your journey made your phone run out of space. Which of the following actions should you perform in order to increase the amount of memory space of your phone without losing any photo or video?

- (A) Get new game pads
- (B) Get a new headset
- (C) Get a new microSD**
- (D) Get a new speaker

Explanation 11. **Get a new microSD is the correct answer.** A microSD card is a removable memory card that’s inserted into your device that increases the amount of memory space it has.

You can transfer the data on a microSD card to different locations, by syncing with a USB cable, slotting the card into your laptop (not all laptops have this capability) or wirelessly via Bluetooth.

The rest options are incorrect because none of them can increase the amount of memory space of your phone.

Question 12. You have just realized that you lost the charging cable of your iPhone 8. Now you are heading to the Apple store to buy a new one, as the battery of your phone is running low. What sort of cable do you need to charge your phone?

- (A) Micro USB
- (B) USB-C
- (C) Mini USB
- (D) **Lightning**

Explanation 12. Lightning is the correct answer. Lightning is a proprietary computer bus and power connector created and designed by Apple. The Lightning connector is used to connect Apple mobile devices like iPhones, iPads, and iPods to host computers, external monitors, cameras, USB battery chargers, and other peripherals.

Micro USB is incorrect. A micro-USB is a miniature USB, and most likely you have one at the end of your smartphone charging cord. This is the piece that plugs into the micro-USB port on your smartphone or tablet.

USB-C is incorrect. This is much faster than any other sort of USB connector. They're commonly used to charge portable devices, smartphones, laptops, and even security cameras but you can't charge the iPhone 8 with a USB-C.

Mini USB is incorrect. The mini USB cable is most commonly used to charge mobile devices, but can also be used to transfer data between computers with at least one USB port but you can't charge the iPhone 8 with a Mini USB.

Question 13. You have just bought a new wireless headphone and you want to connect the headphones with your smartphone to listen to music and make and receive calls. Which of the following actions should you execute to connect your smartphone to the wireless headphones?

- (A) Enable Bluetooth
- (B) Enable pairing**
- (C) Enable Wi-Fi
- (D) Enable tethering

Explanation 13. Enable pairing is the correct answer. By pairing of the device, you will establish the Bluetooth connection between your smartphone and the wireless headphone. Bluetooth is commonly used to create a wireless connection between a smartphone and a wireless headphone for making/receiving phone calls and listening to music.

Enable Bluetooth is incorrect. Enabling just the Bluetooth can't pair the devices. Bluetooth is a wireless technology standard used for exchanging data between fixed and mobile devices over short distances.

Enable Wi-Fi is incorrect. Wi-Fi describes a technology for radio wireless local area networking of devices based on the IEEE 802.11 standards. WiFi works off of the same principle as other wireless devices – it uses radio frequencies to send signals between devices. The radio frequencies are completely different say from walky-talkies, car radios, cell phones, and weather radios.

Enable tethering is incorrect. Tethering is a technology that uses your phone or other data enabled device as a modem or router so that you can access the internet with devices that aren't able to, such as your tablet or laptop.

Question 14. Your co-worker just got a new Android phone from the company. He has been tasked to migrate all of his phone's existing business-related contacts from the current phone (iPhone) to the new phone (Android). His phone had been configured to keep all of his business-related contacts to the company's on-premise cloud-based service. Your co-worker came to you to guide him on how to complete this task. Which of the following is the BEST and most EFFICIENT way for your co-worker to migrate his data from his old iPhone to his new Android device?

(A) Your co-worker should create a wireless Bluetooth connection between the iPhone and the Android devices and use it to copy his contacts to the new device

(B) Your co-worker should migrate all of the contacts manually to avoid losing any of his contacts

(C) **Your co-worker should log into his corporate email account on the new Android phone and restore his contacts to the new device**

(D) Your co-worker should perform a backup and export his contacts from his iPhone to his PC and then import the contacts from his PC to his new Android device

Explanation 14. **Your co-worker should log into his corporate email account on the new Android phone and restore his contacts to the new device is the correct answer.** Since

your co-worker has a corporate account that is used to synchronize data from his device to the cloud, the easier, quickest, and most efficient method would be for him to fully synchronize his contacts with his corporate cloud-based account from his old device first.

Then, he can configure his new Android device to access his corporate account, and it will automatically download and synchronize the data from the cloud-based servers onto his new Android device.

The rest option can be considered as correct but the question says to find the **BEST** and most **EFFICIENT** way to make the migration. The rest options are error-prone and time-consuming.

Question 15. Your mobile data on your phone is enabled and you are browsing the web, watching videos on Youtube. Suddenly you enable the airplane mode and the internet connection was lost. Which of the following signals being disabled by airplane mode? (Choose all that apply)

- (A) Cellular
- (B) NFC
- (C) VPN
- (D) Bluetooth
- (E) SSO

Explanation 15. Cellular and Bluetooth are the correct answers. Airplane mode disables a device's cellular radio, Wi-Fi, and Bluetooth—all the wireless transmission functions.

NFC is incorrect. NFC stands for "Near Field Communication" and, as the name implies, it enables short-range communication between compatible devices.

VPN is incorrect. A Virtual Private Network is a service that allows you to connect to the Internet via an encrypted tunnel to ensure your online privacy and protect your sensitive data. A VPN is commonly used to secure connection to a public Wi-Fi hotspot, hide IP address, and make your browsing private.

SSO is incorrect. Single sign-on (SSO) is an authentication method that enables users to securely authenticate with multiple applications and websites by using just one set of credentials.

Question 16. You have been hired as a 1st line support engineer and your day-to-day duties include solving problems at the first point of contact so that the customer can continue with their day. Today you receive a call from a customer that needs help related to email synchronization. He wants that each time he receives an email, the email should be synchronised across all devices. Which of the following protocol should you use to make that happen?

- (A) SMTP
- (B) POP3
- (C) **IMAP**
- (D) S/MIME

Explanation 16. IMAP is the correct answers. The Internet Message Access Protocol (IMAP) is a mail protocol used for accessing email on a remote web server from a local client.

IMAP allows simultaneous access by multiple clients. This is why IMAP is more suitable for you if you're going to access your

email from different locations or if your messages are managed by multiple users. IMAP is one of the most common protocols for receiving email and syncs messages across all devices.

By default, the IMAP protocol works on two ports:

- 1. Port 143** – this is the default IMAP non-encrypted port;
- 2. Port 993** – this is the port you need to use if you want to connect using IMAP securely.

SMTP is incorrect. Simple Mail Transfer Protocol (SMTP) is the standard protocol for **sending emails** across the Internet.

By default, the SMTP protocol works on three ports:

- 1. Port 25** – this is the default SMTP non-encrypted port;
- 2. Port 2525** – this port is opened on all SiteGround servers in case port 25 is filtered (by your ISP for example) and you want to send non-encrypted emails with SMTP;
- 3. Port 465** – this is the port used if you want to send messages using SMTP securely.

POP3 is incorrect. Post Office Protocol version 3 (POP3) is a standard mail protocol used to receive emails from a remote server to a local email client. POP3 allows you to download email messages on your local computer and read them even when you are offline.

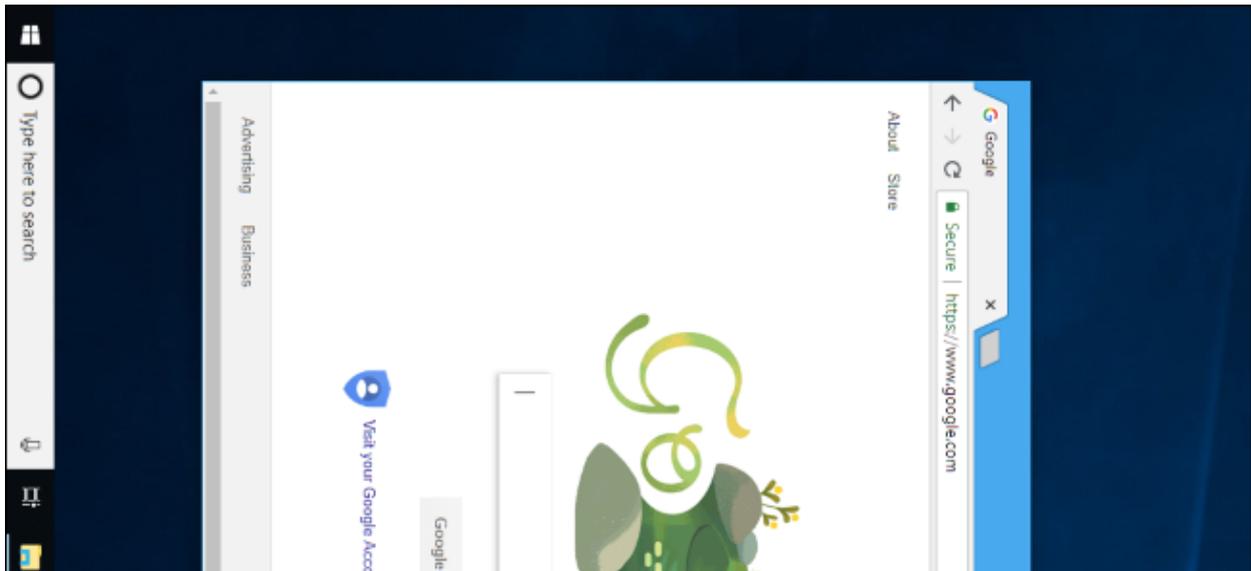
Note, that when you use POP3 to connect to your email account, messages are downloaded locally and removed from the email server. This means that if you access your account from multiple locations, that may not be the best option for you.

By default, the POP3 protocol works on two ports:

- 1. Port 110** – this is the default POP3 non-encrypted port;
- 2. Port 995** – this is the port you need to use if you want to connect using POP3 securely.

S/MIME is incorrect. S/MIME (Secure/Multipurpose Internet Mail Extensions) is a widely accepted method (or more precisely, a protocol) for sending digitally signed and encrypted messages. S/MIME allows you to encrypt emails and digitally sign them. When you use S/MIME with an email message, it helps the people who receive that message to be certain that what they see in their inbox is the exact message that started with the sender.

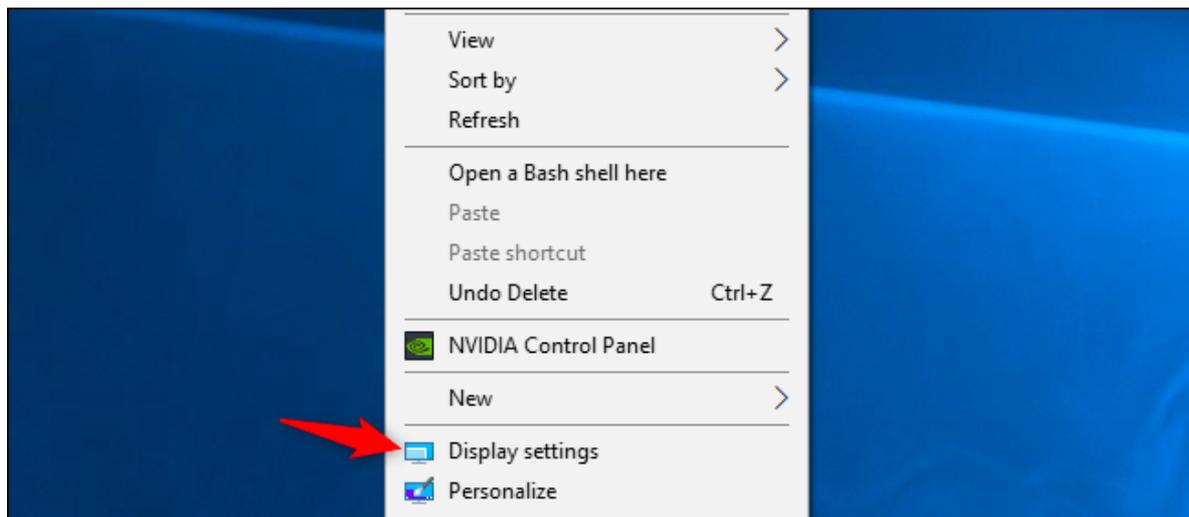
Question 17. Your co-worker complains that his laptop has a screen image that is being displayed with a wrong orientation as the screenshot below. What is the BEST method to fix this issue?



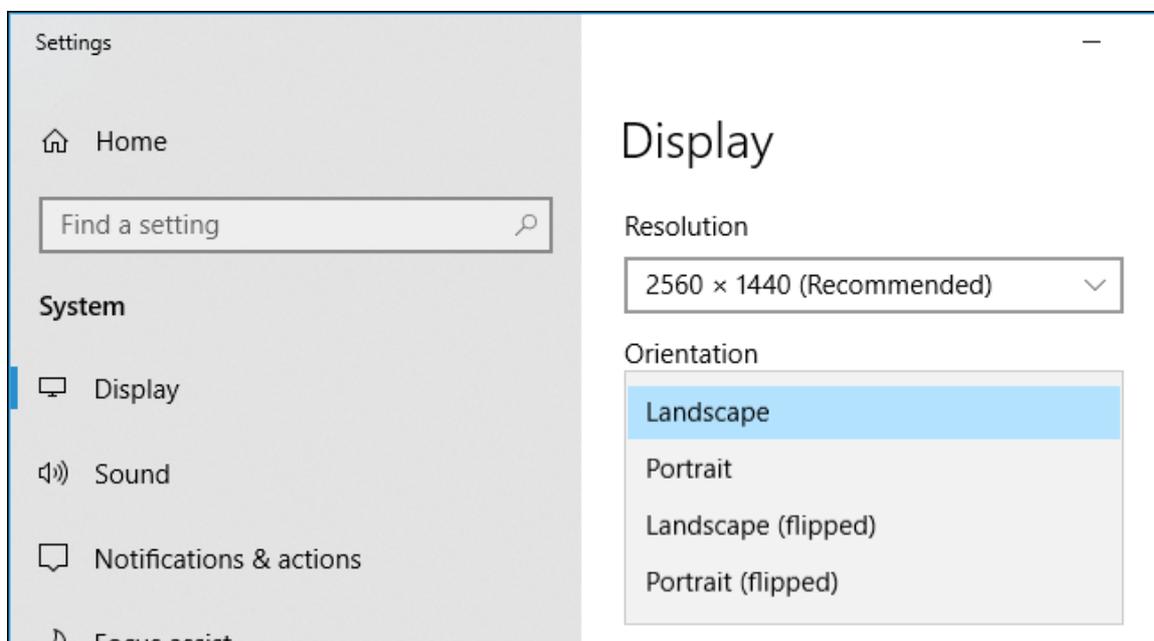
- (A) Change monitor
- (B) Re-install the Windows
- (C) Rotating the screen**
- (D) Update the display drivers

Explanation 17. Rotating the screen is the correct answer. Windows can rotate your screen without any extra software. This is especially useful if you have a desktop monitor that rotates.

To rotate your screen on Windows 10, right-click your desktop, and then select the "Display Settings" command. You'll be taken to the Settings > System > Display window.



Locate the Orientation option under Resolution, click the drop-down menu under it, and then choose your preferred screen orientation—Landscape, Portrait, Landscape (flipped), or Portrait (flipped.)



Question 18. Your friend came to you to provide him a solution to his problem. He needs a device that allows him to see his email notifications and instant messages from Messenger and WhatsApp on the go. Which of the following devices would you recommend to your friend?

- (A) Smartwatch**
- (B)** Fitness monitors
- (C)** VR headsets
- (D)** E-readers

Explanation 18. Smartwatch is the correct answer. A smartwatch is a portable device that's designed to be worn on a wrist. Smartwatches—like smartphones—use touchscreens, offer apps, and often record your heart rate and other vital signs.

Most smartwatches—whether they're intended for daily use (as with the Apple Watch) or for specific purposes (as with the Garmin Fenix)—offer a suite of standard features:

1. Notifications: Smartphones display notifications to alert you of important events or activities.

2. Apps: Beyond displaying notifications from your phone, a smartwatch is only as good as the apps it supports.

3. GPS: Most smartwatches include a GPS for tracking your location or receiving location-specific alerts.

Fitness monitors is incorrect. A fitness tracker, is a device or application for monitoring and tracking fitness-related metrics such as distance walked or run, calorie consumption, and in some cases heartbeat.

VR headsets is incorrect. A virtual reality (VR) headset is a head-mounted device that provides virtual reality for the wearer. Virtual reality headsets are widely used with video games but they are also used in other applications, including simulators and trainers.

E-readers is incorrect. An e-reader (electronic reader) is a device for reading content, such as e-books, newspapers and documents.

Question 19. You have been hired as a network technician to install, maintain, and troubleshoot wireless connections. Your task is to find out which of the following types of wireless connections requires a pin to be entered as part of the pairing process prior to it being utilized?

- (A) NFC
- (B) Bluetooth**
- (C) IR
- (D) Hotspot

Explanation 19. Bluetooth is the correct answer. Wireless devices with Bluetooth radios must be paired with each other before they can communicate. This involves making them discoverable and entering a PIN as part of the pairing process. The pairing process works with Bluetooth profiles, and each device has to be compatible.

NFC is incorrect. Near-Field-Communication is a set of communication protocols for communication between two electronic devices over a distance of 4 cm or less.

IR is incorrect. Infrared (IR) wireless uses pulses of infrared light to transmit data from one device to another.

Hotspot is incorrect. A hotspot is a physical location where people may obtain Internet access, typically using Wi-Fi technology, via a wireless local-area network (WLAN) using a router connected to an Internet service provider.

Question 20. The laptop from your co-worker has stopped working, it does not power on or respond to any action. During the troubleshooting process, you have realized that the motherboard has failed and needs to be replaced. In the meantime, your co-worker needs to get some of his PowerPoint documents from the laptop because tomorrow he has a product presentation. Which of the following actions should you perform to give your co-worker access to the files he needs for his presentation?

- (A) Remove the hard drive from the laptop and then install it as the primary hard drive in your desktop computer in order to get the PowerPoint
- (B) Remove the hard drive from your co-worker's laptop, place it in an external USB enclosure, and connect it as a secondary drive to your desktop computer in order to get the PowerPoint
- (C) Try to fix the motherboard
- (D) Replace the hard drive from the laptop with an SSD disk

Explanation 20. Remove the hard drive from your co-worker's laptop, place it in an external USB enclosure, and connect it as a secondary drive to your desktop computer in order to get the PowerPoint is the correct answer. When you remove the hard drive from the laptop and placing it into an external USB enclosure, you have turned the drive into an external USB hard drive that can be connected to any computer as a secondary device. This will allow you to connect the drive to your desktop computer and then copy any files or folders that you need.

The rest options are incorrect as none of them can help your co-worker get his files in a timely manner and correctly.

CHAPTER 2

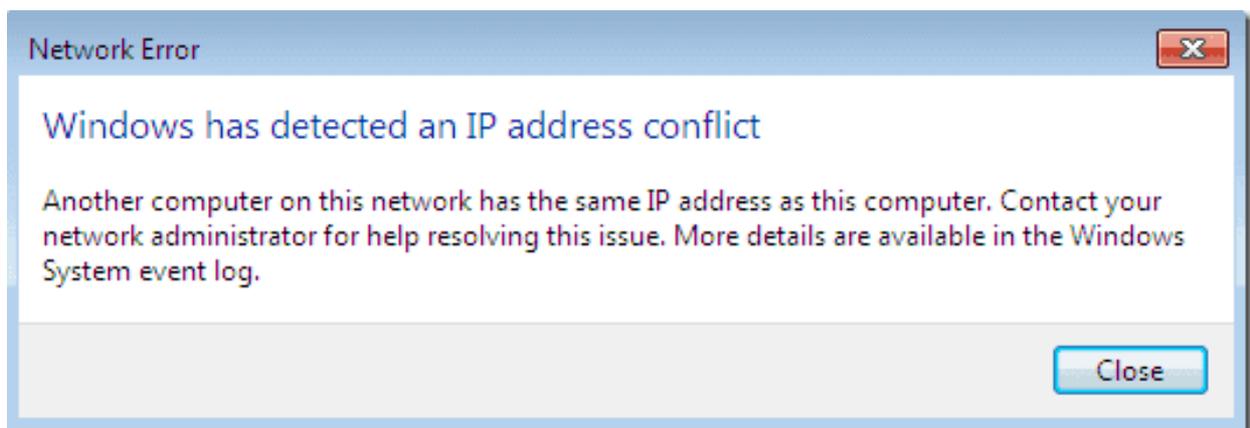
NETWORKING

Questions 21-40

Question 21. Your company just installed a new web server within the DMZ. Your manager asked you to open the port to allow system administrators to connect securely for their administrative tasks. Which port should you set as open to allow the system administrators to manage the server remotely in a secure way?

- (A) 427
- (B) 22
- (C) 548
- (D) 389

Question 22. You are receiving calls from different users stating they are getting an error message concerning duplicate IP addresses being detected on their systems as the image below.



These users aren't able to connect to the internet or access any file which resides outside of their network. Which of the following servers should you check first in order to troubleshoot this issue?

- (A) Web server
- (B) Mail server
- (C) DHCP server
- (D) Proxy server

Question 23. You have been tasked to implement a security policy at your organization by configuring an ACL rule. The ACL (Access Control Rule) should prevent users with IPs 145.167.255.0 – 145.167.255.254 from accessing the network 2.2.2.2. Which of the following devices would you use to configure the ACL?

- (A) Switch
- (B) Repeater
- (C) Hub
- (D) Firewall

Question 24. You notice that the network performance of the IT department is running slow. After the troubleshooting process, you find out that the issue is due to an extremely high number of collisions. This is happening due to the hub device you had installed in the past. Now you need a more advanced device to replace the hub. Which of the following devices should you install to decrease the number of collisions and increase the network performance?

- (A) Repeater
- (B) Switch
- (C) Bridge
- (D) Access points

Question 25. You can ping the IP address of 1.2.3.4 and 195.46.2.4 but you are unable to access examsdigest.com and jobsdigest.io. Which of the following services doesn't work properly causing these issues?

- (A) DHCP doesn't work
- (B) DNS doesn't work
- (C) VLAN doesn't work
- (D) NAT doesn't work

Question 26. You train the new junior network engineer of your company to install a CAT 6 network. You ask him to give you the right connector to terminate the CAT 6 cables. He opens the tool kit bag to find it, but he doesn't know which connector type is ideal for the installation. Which of the following connectors does the junior network engineer need to select to terminate the new CAT 6 cables being installed?

- (A) RJ-45
- (B) RJ-11
- (C) RS-232
- (D) RG-6

Question 27. Which of the following IEEE 802.11 Wi-Fi standards use the 2.4 GHz band? (Choose all that apply)

- (A) 802.11g
- (B) 802.11a
- (C) 802.11n
- (D) 802.11ac
- (E) 802.11ax

Question 28. You just receive a call from the senior network engineer of your company asking you why the employees can't send and receive emails. After a quick investigation, you notice that something is wrong with the firewall configuration. What might be the primary cause of this issue?

- (A) The firewall has a rule that blocks port 23
- (B) The firewall has a rule that blocks port 3389
- (C) The firewall has a rule that blocks port 25
- (D) The firewall has a rule that blocks port 161

Question 29. You just bought a new SOHO router for your home. You want to install the router to provide wireless broadband routing and make the network secure. Which of the following encryption settings would you configure to make the wireless network secure?

- (A) WPA and AES
- (B) WEP and AES
- (C) WPA2 and AES
- (D) WPA and TKIP

Question 30. The new project is to install a wireless network for the bakery shop in your neighborhood. The owner wants the network to be extremely fast and not having frequency-overlap problems. Which of the following wireless standards should you install for the fastest data transfer speeds that support both 2.4GHz and 5GHz?

- (A) 802.11b
- (B) 802.11g
- (C) 802.11n
- (D) 802.11ac

Question 31. You have been tasked to recommend a new device for your company's network that monitors the traffic moving on the network and searches for suspicious activities and known threats. The device should send an alert when it finds such items but it should not take any action to stop the threats. Which of the following devices would be the BEST for you to complete the task?

- (A) IDS
- (B) VPN
- (C) NAT
- (D) IPS

Question 32. Your manager assigned you a task to connect the printer of the IT department to one of the available switch ports. The next step is to connect all the PCs from the IT department to that particular switch. Afterward, you need to configure the switch and the PCs so each time a co-worker needs to print a document, the document will be printed using the IT departments' printer. Which of the following network types would MOST likely be used in this scenario?

- (A) LAN
- (B) WAN
- (C) PAN
- (D) MAN

Question 33. Your company has several campuses located across the city. Within each campus, the buildings are interconnected with a campus area network. If you connect each of the campuses to each other across the city, what type of network would this become?

- (A) LAN
- (B) WAN
- (C) PAN
- (D) MAN

Question 34. Recently your company opens six (6) small offices across the city. The expansion led you to work closely with the network designers. The new project is to connect all the offices with the headquarters (HQ). You have listed all the requirements for the connection, including that it must be wired and support at least 4 Gbps of bandwidth. Which of the following network types would MOST likely be used for the project to securely connect their internet networks together across the city?

- (A) LAN
- (B) WAN
- (C) PAN
- (D) MAN

Question 35. Given the following internet connection types which one uses light instead of electricity to transmit signals?

- (A) Cable
- (B) Fiber
- (C) DSL
- (D) Dial-up

Question 36. You have been tasked to configure the firewall of your company's network. Your project manager wants to prevent all the web traffic, coming from/to your network. Which of the following ports should you block at the firewall if you want to prevent the web traffic? (Choose all that apply.)

- (A) 21
- (B) 22
- (C) 80
- (D) 443
- (D) 110

Question 37. You have been joined a team of 2x network designers and 2x network engineers for the new project. The project is to design and implement a solution for a newly opened hotel to allow guests to connect (wirelessly) to the internet after the check-in process. Which of the following devices would allow the guests to connect their laptops to the hotel's network after the check-in?

- (A) Router
- (B) Access point
- (C) Switch
- (D) Firewall

Question 38. You have been selected to decide which of the following devices your company will choose in order to detect and prevent identified threats for possible malicious incidents by continuously monitoring your company's network.

- (A) IDS
- (B) DHCP
- (C) DNS
- (D) IPS

Question 39. The switch that connects the accounting department with the internet is experiencing interruption at intervals. All the accounting department can't connect on the internet with a steady connection. You think that the issue is being caused by the switch's motherboard, not getting the proper amount of power to it. Which of the following tools should you use to troubleshoot the issue and determine if the proper amount of power is being supplied to the switch's motherboard?

- (A) Crimper
- (B) Multimeter
- (C) Cable tester
- (D) Punchdown tool

Question 40. Which of the following addresses are valid Class C network IDs? (Choose two answers)

- (A) 195.0.0.0
- (B) 22.22.3.0
- (C) 222.0.0.0
- (D) 191.255.255.0
- (E) 127.0.0.0

Answers 21-40

Question 21. Your company just installed a new web server within the DMZ. Your manager asked you to open the port to allow system administrators to connect securely for their administrative tasks. Which port should you set as open to allow the system administrators to manage the server remotely in a secure way?

- (A) 427
- (B) 22**
- (C) 548
- (D) 389

Explanation 21. **22 is the correct answer.** An SSH server, by default, listens on the standard Transmission Control Protocol (TCP) port 22. SSH, also known as Secure Shell or Secure Socket Shell, is a network protocol that gives users, particularly system administrators, a secure way to access a computer over an unsecured network.

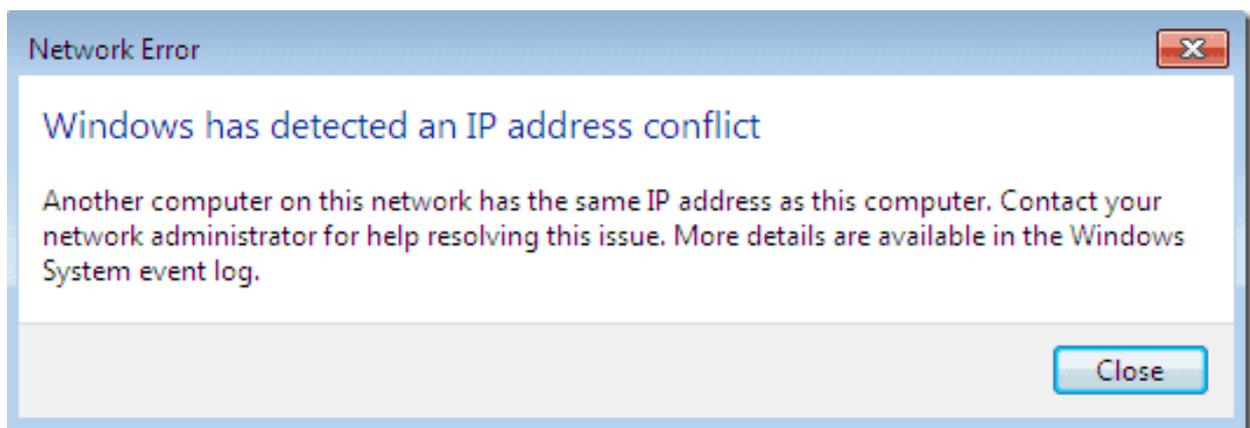
427 is incorrect. Service Location Protocol by default listens on the standard Transmission Control Protocol (TCP) port 22. The Service Location Protocol (SLP) is a protocol or method of organizing and locating the resources (such as printers, disk

drives, databases, e-mail directories, and schedulers) in a network. SLP is intended to give users an easy-to-use interface to a network's resource information.

548 is incorrect. AFP or Apple Filing Protocol works over TCP 548 and is an Apple proprietary networking protocol used for file services via a networked connection. AFP is short for Apple Filing Protocol, this is an Apple proprietary networking protocol that offered file based services for macOS. The protocol is one of many that Apple support and it's functionality can be compared to some of the others such as FTP.

389 is incorrect. LDAP (Lightweight Directory Access Protocol) works over the TCP 389 and is an open and cross-platform protocol used for directory services authentication. LDAP provides the communication language that applications use to communicate with other directory services servers. Directory services store the users, passwords, and computer accounts, and share that information with other entities on the network.

Question 22. You are receiving calls from different users stating they are getting an error message concerning duplicate IP addresses being detected on their systems as the image below.



These users aren't able to connect to the internet or access any file which resides outside of their network. Which of the following servers should you check first in order to troubleshoot this issue?

- (A) Web server
- (B) Mail server
- (C) **DHCP server**
- (D) Proxy server

Explanation 22. **DHCP server is the correct answer.** Dynamic Host Configuration Protocol (DHCP) is a network management protocol used to automate the process of configuring devices on IP networks, thus allowing them to use network ser-

vices such as DNS, NTP, and any communication protocol based on UDP or TCP.

A DHCP server dynamically assigns an IP address and other network configuration parameters to each device on a network so they can communicate with other IP networks.

Web server is incorrect. If the Web server was down then the users couldn't browse the hosted websites on this particular web server.

Mail server is incorrect. As the name implies the mail server is responsible for moving emails between users.

Proxy server is incorrect. A proxy server acts as a gateway between you and the internet. It's an intermediary server separating end users from the websites they browse. Proxy servers provide varying levels of functionality, security, and privacy depending on your use case, needs, or company policy.

Question 23. You have been tasked to implement a security policy at your organization by configuring an ACL rule. The ACL (Access Control Rule) should prevent users with IPs 145.167.255.0 – 145.167.255.254 from accessing the network 2.2.2.2. Which of the following devices would you use to configure the ACL?

- (A) Switch
- (B) Repeater
- (C) Hub
- (D) Firewall**

Explanation 23. Firewall is the correct answer. A firewall is a network security device that monitors incoming and outgoing network traffic and decides whether to allow or block specific traffic based on a defined set of security rules.

Firewalls have been a first line of defense in network security. They establish a barrier between secured and controlled internal networks that can be trusted and untrusted outside networks, such as the Internet.

A firewall can be hardware, software, or both.

The rest options are incorrect as you can't configure Access Control Lists (ACLs) on these devices.

Question 24. You notice that the network performance of the IT department is running slow. After the troubleshooting process, you find out that the issue is due to an extremely high number of collisions. This is happening due to the hub device you had installed in the past. Now you need a more advanced device to replace the hub. Which of the following devices should you install to decrease the number of collisions and increase the network performance?

- (A) Repeater
- (B) Switch**
- (C) Bridge
- (D) Access points

Explanation 24. Switch is the correct answer. A network switch connects devices within a network (often a local area network) and forwards data packets to and from those devices. Unlike a router, a switch only sends data to the single device it is intended for (which may be another switch, a router, or a user's computer), not to networks of multiple devices.

The term collision domain is used to describe a part of a network where packet collisions can occur. Packet collisions occur when two devices on a shared network segment send packets

simultaneously. The colliding packets must be discarded and sent again, which reduces network efficiency.

Collisions occur often in a hub environment because all devices connected to the hub are in the same collision domain.

Repeater is incorrect. A repeater (also called wireless range extender) is a device that takes an existing signal from a wireless router or wireless access point and rebroadcasts it to create a second network. Repeaters are commonly used to improve signal range and strength within homes and small offices.

Bridge is incorrect. A network bridge is a device that divides a network into segments. Each segment represents a separate collision domain, so the number of collisions on the network is reduced. Each collision domain has its own separate bandwidth, so a bridge also improves the network performance. The bridge is considered a correct answer but we need the most advanced device which is the switch.

Access points is incorrect. An access point is a device that creates a wireless local area network, or WLAN, usually in an office or large building. An access point connects to a wired

router, switch, or hub via an Ethernet cable, and projects a Wi-Fi signal to a designated area.

Question 25. You can ping the IP address of 1.2.3.4 and 195.46.2.4 but you are unable to access examsdigest.com and jobsdigest.io. Which of the following services doesn't work properly causing these issues?

- (A) DHCP doesn't work
- (B) DNS doesn't work**
- (C) VLAN doesn't work
- (D) NAT doesn't work

Explanation 25. DNS doesn't work is the correct

answer. The **Domain Name System (DNS)** is the phonebook of the Internet. Humans access information online through domain names, like examsdigest.com or youtube.com. Web browsers interact through Internet Protocol (IP) addresses. DNS translates domain names to IP addresses so browsers can load Internet resources.

Each device connected to the Internet has a unique IP address that other machines use to find the device. DNS servers eliminate the need for humans to memorize IP addresses such as

192.168.1.1 (in IPv4), or more complex newer alphanumeric IP addresses such as 2100:bb22:3272:1::2133:b1a4 (in IPv6).

DNS records are instructions that live in authoritative DNS servers and provide information about a domain including what IP address is associated with that domain and how to handle requests for that domain. These records consist of a series of text files written in what is known as DNS syntax. DNS syntax is just a string of characters used as commands which tell the DNS server what to do.

The most common types of DNS are:

A is used to map hostnames to an IPv4 address of the host.

AAAA is used to map hostnames to an IPv6 address of the host.

CNAME is used to point a domain or subdomain to another hostname.

SRV is used to identify computers that host specific services.

MX is used to help route emails.

TXT is used to provide the ability to associate text with a zone.

NS indicates which DNS server is authoritative for that domain.

PTR is used for the Reverse DNS (Domain Name System) lookup.

DHCP doesn't work is incorrect. Dynamic Host Configuration Protocol (DHCP) is a network management protocol used to

automate the process of configuring devices on IP networks, thus allowing them to use network services such as DNS, NTP, and any communication protocol based on UDP or TCP. A DHCP server dynamically assigns an IP address and other network configuration parameters to each device on a network so they can communicate with other IP networks.

VLAN doesn't work is incorrect. A VLAN (virtual LAN) is a subnetwork that can group together collections of devices on separate physical local area networks (LANs). A LAN is a group of computers and devices that share a communications line or wireless link to a server within the same geographical area.

VLANs make it easy for network administrators to partition a single switched network to match the functional and security requirements of their systems without having to run new cables or make major changes in their current network infrastructure.

NAT doesn't work is incorrect. Network Address Translation (NAT) is designed for IP address conservation. It enables private IP networks that use unregistered IP addresses to connect to the Internet. NAT operates on a router, usually connecting two networks together, and translates the private (not globally unique) addresses in the internal network into legal addresses before packets are forwarded to another network.

Question 26. You train the new junior network engineer of your company to install a CAT 6 network. You ask him to give you the right connector to terminate the CAT 6 cables. He opens the tool kit bag to find it, but he doesn't know which connector type is ideal for the installation. Which of the following connectors does the junior network engineer need to select to terminate the new CAT 6 cables being installed?

- (A) RJ-45**
- (B) RJ-11**
- (C) RS-232**
- (D) RG-6**

Explanation 26. RJ-45 is the correct answer. RJ45 is a type of cable connector which is mainly used in computer networks. RJ45 is mainly used for ethernet networking which is used to connect different types of devices like a switch, hub, PC, router, firewall to each other. RJ45 is the most known and popular connector type in the IT world.

RJ-11 is incorrect. RJ-11 is the common connector for plugging a telephone into the wall and the handset into the telephone.

RS-232 is incorrect. RS-232 is a form of serial data transmis-

sion. It formally defines signals connecting between a DTE such as a computer terminal, and a DCE, such as a modem

RG-6 is incorrect. The RG-6 is primarily used for cable and satellite signal transmission for residential or commercial installations. This coax cable is thin and easy to bend for wall or ceiling installations and remains the preferred choice to relay cable television signals.

Question 27. Which of the following IEEE 802.11 Wi-Fi standards use the 2.4 GHz band? (Choose all that apply)

- (A) 802.11g**
- (B) 802.11a**
- (C) 802.11n**
- (D) 802.11ac**
- (E) 802.11ax**

Explanation 27. A, C and E are the correct answers. The following table provides all the needed information to answer any question either on the interview as a junior network engineer or for the CCNA/Network+/A+ core exam.

IEEE Standard	2.4 GHz	5 GHz	Max Data Rate
802.11	Yes	No	2 Mbps
802.11b	Yes	No	11 Mbps
802.11g	Yes	No	54 Mbps
802.11a	No	Yes	54 Mbps
802.11n	Yes	Yes	600 Mbps
802.11ac	No	Yes	6.93 Gbps
802.11ax	Yes	Yes	4x higher than 802.11ac

Question 28. You just receive a call from the senior network engineer of your company asking you why the employees can't send and receive emails. After a quick investigation, you notice that something is wrong with the firewall configuration. What might be the primary cause of this issue?

- (A) The firewall has a rule that blocks port 23
- (B) The firewall has a rule that blocks port 3389
- (C) **The firewall has a rule that blocks port 25**
- (D) The firewall has a rule that blocks port 161

Explanation 28. RJ-45 is the correct answer. SMTP uses port 25. An SMTP (Simple Mail Transfer Protocol) server is an application that's primary purpose is to send, receive, and/or relay outgoing mail between email senders and receivers.

When you send an email, the SMTP server processes your email, decides which server to send the message to, and relays the message to that server.

The firewall has a rule that blocks port 23 is incorrect. Telnet uses port 23. Telnet is a network protocol used to virtually access a computer and to provide a two-way, collaborative and text-based communication channel between two machines. In addition, telnet is a type of client-server protocol that can be used to open a command line on a remote computer, typically a server.

The firewall has a rule that blocks port 3389 is incorrect. RDP uses port 3389. The Windows Remote Desktop Connection tool gives users the ability to connect to a remote Windows PC or server over the internet or on a local network, giving them full access to the tools and software installed on it. This is made possible by Microsoft's own Remote Desktop Protocol (or RDP for short).

The firewall has a rule that blocks port 161 is

incorrect. SNMP uses port 161. Simple Network Management Protocol (SNMP) is an application-layer protocol for monitoring and managing network devices on a local area network (LAN) or wide area network (WAN). The purpose of SNMP is to provide network devices such as routers, servers and printers with a common language for sharing information with a network management system (NMS).

Question 29. You just bought a new SOHO router for your home. You want to install the router to provide wireless broadband routing and make the network secure. Which of the following encryption settings would you configure to make the wireless network secure?

- (A) WPA and AES
- (B) WEP and AES
- (C) **WPA2 and AES**
- (D) WPA and TKIP

Explanation 29. **WPA2 and AES is the correct answer.** This is the most secure option. It uses WPA2, the latest Wi-Fi encryption standard, and the latest AES encryption protocol. You should be using this option. WPA2 is the most secure wireless encryption standard, as it has replaced both WPA and WEP.

AES is an extremely strong encryption algorithm, and it used by default in the WPA2 standard.

The rest options are outdated and can't make your home's network secure.

Question 30. The new project is to install a wireless network for the bakery shop in your neighborhood. The owner wants the network to be extremely fast and not having frequency-overlap problems. Which of the following wireless standards should you install for the fastest data transfer speeds that support both 2.4GHz and 5GHz?

- (A) 802.11b
- (B) 802.11g
- (C) 802.11n**
- (D) 802.11ac

Explanation 30. **802.11n is the correct answer.**

The table below highlights the characteristics of the various 802.11 wireless standards.

IEEE Standards	Frequency/Medium	Speed
802.11	2.4 GHz	1 to 2Mbps
802.11a	5 GHz	Up to 54Mbps
802.11b	2.4 GHz	Up to 11Mbps
802.11g	2.4 GHz	Up to 54Mbps
802.11n	2.4 GHz / 5 GHz	Up to 600Mbps
802.11ac	5 GHz	Up to 1.3Gbps

The 802.11ac networks are the fastest wireless networks but one of the requirements of the project is to install a wireless network that supports both 2.4 GHz and 5.0 GHz frequencies.

Question 31. You have been tasked to recommend a new device for your company's network that monitors the traffic moving on the network and searches for suspicious activities and known threats. The device should send an alert when it finds such items but it should not take any action to stop the threats. Which of the following devices would be the BEST for you to complete the task?

- (A) IDS**
- (B) VPN**
- (C) NAT**
- (D) IPS**

Explanation 31. IDS is the correct answer. An Intrusion Detection System (IDS) is a software application or hardware appliance that monitors traffic moving on networks and through systems to search for suspicious activity and known threats, sending up alerts when it finds such items.

IDS doesn't alter the network packets in any way, whereas IPS prevents the packet from delivery based on the contents of the packet, much like how a firewall prevents traffic by IP address.

IPS is incorrect. An Intrusion Prevention System (IPS), also known as intrusion detection prevention system (IDPS), is a technology that keeps an eye on a network for any malicious activities attempting to exploit a known vulnerability.

An Intrusion Prevention System's main function is to identify any suspicious activity and either detect and allow (IDS) or prevent (IPS) the threat.

VPN is incorrect. A virtual private network (VPN) gives you online privacy and anonymity by creating a private network from a public internet connection. VPNs mask your internet protocol (IP) address so your online actions are virtually untraceable. Most important, VPN services establish secure and encrypted connections to provide greater privacy than even a secured Wi-Fi hotspot.

NAT is incorrect. Network Address Translation (NAT) is designed for IP address conservation. It enables private IP networks that use unregistered IP addresses to connect to the Internet. NAT operates on a router, usually connecting two networks together, and translates the private (not globally unique) addresses in the internal network into legal addresses before packets are forwarded to another network.

Question 32. Your manager assigned you a task to connect the printer of the IT department to one of the available switch ports. The next step is to connect all the PCs from the IT department to that particular switch. Afterward, you need to configure the switch and the PCs so each time a co-worker needs to print a document, the document will be printed using the IT departments' printer. Which of the following network types would MOST likely be used in this scenario?

- (A) LAN
- (B) WAN
- (C) PAN
- (D) MAN

Explanation 32. LAN is the correct answer. A local area network (LAN) is a collection of devices connected together in one physical location, such as a building, office, or home. A LAN can be small or large, ranging from a home network with one user to an enterprise network with thousands of users and devices in an office or school.

Regardless of size, a LAN's single defining characteristic is that it connects devices that are in a single, limited area.

WAN is incorrect. A wide area network (WAN) is a large computer network that connects groups of computers over large distances. WANs are often used by large businesses to connect

their office networks; each office typically has its own local area network, or LAN, and these LANs connect via a WAN. These long connections may be formed in several different ways, including leased lines, VPNs, or IP tunnels.

PAN is incorrect. A personal area network (PAN) connects electronic devices within a user's immediate area. The size of a PAN ranges from a few centimeters to a few meters. One of the most common real-world examples of a PAN is the connection between a Bluetooth earpiece and a smartphone. PANs can also connect laptops, tablets, printers, keyboards, and other computerized devices.

MAN is incorrect. A metropolitan area network (MAN) is a computer network that connects computers within a metropolitan area, which could be a single large city, multiple cities and towns, or any given large area with multiple buildings. A MAN is larger than a local area network (LAN) but smaller than a wide area network (WAN).

Question 33. Your company has several campuses located across the city. Within each campus, the buildings are interconnected with a campus area network. If you connect each of the campuses to each other across the city, what type of network would this become?

- (A) LAN
- (B) WAN
- (C) PAN
- (D) MAN**

Explanation 33. MAN is the correct answer. A metropolitan area network (MAN) is a computer network that connects computers within a metropolitan area, which could be a single large city, multiple cities and towns, or any given large area with multiple buildings. A MAN is larger than a local area network (LAN) but smaller than a wide area network (WAN).

LAN is incorrect. A local area network (LAN) is a collection of devices connected together in one physical location, such as a building, office, or home. A LAN can be small or large, ranging from a home network with one user to an enterprise network with thousands of users and devices in an office or school.

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Question 34. Recently your company opens six (6) small offices across the city. The expansion led you to work closely with the network designers. The new project is to connect all the offices with the headquarters (HQ). You have listed all the requirements for the connection, including that it must be wired and support at least 4 Gbps of bandwidth. Which of the following network types would MOST likely be used for the project to securely connect their internet networks together across the city?

- (A) LAN
- (B) WAN
- (C) PAN
- (D) **MAN**

Explanation 34. **MAN is the correct answer.** A metropolitan area network (MAN) is a computer network that connects computers within a metropolitan area, which could be a single large city, multiple cities and towns, or any given large area with multiple buildings. A MAN is larger than a local area network (LAN) but smaller than a wide area network (WAN).

LAN is incorrect. A local area network (LAN) is a collection of devices connected together in one physical location, such as a building, office, or home. A LAN can be small or large, ranging from a home network with one user to an enterprise network

with thousands of users and devices in an office or school.

WAN is incorrect. A wide area network (WAN) is a large computer network that connects groups of computers over large distances. WANs are often used by large businesses to connect their office networks; each office typically has its own local area network, or LAN, and these LANs connect via a WAN. These long connections may be formed in several different ways, including leased lines, VPNs, or IP tunnels.

PAN is incorrect. A personal area network (PAN) connects electronic devices within a user's immediate area. The size of a PAN ranges from a few centimeters to a few meters. One of the most common real-world examples of a PAN is the connection between a Bluetooth earpiece and a smartphone. PANs can also connect laptops, tablets, printers, keyboards, and other computerized devices.

Question 35. Given the following internet connection types which one uses light instead of electricity to transmit signals?

- (A) Cable
- (B) Fiber**
- (C) DSL
- (D) Dial-up

Explanation 35. Fiber is the correct answer. As opposed to most types of cable, fiber-optic cable (also known as an optical fiber) uses light instead of electricity to transmit signals. Obviously, light is the fastest method of transmitting information, but fiber-optic cable has the additional advantage of not being subject to electrical interference.

Cable is incorrect. Cable internet runs through an underground coaxial cable network. It's usually faster than DSL and a better option if you have a lot of streaming on multiple devices, video calls, large file uploads, or online gaming going on in your home.

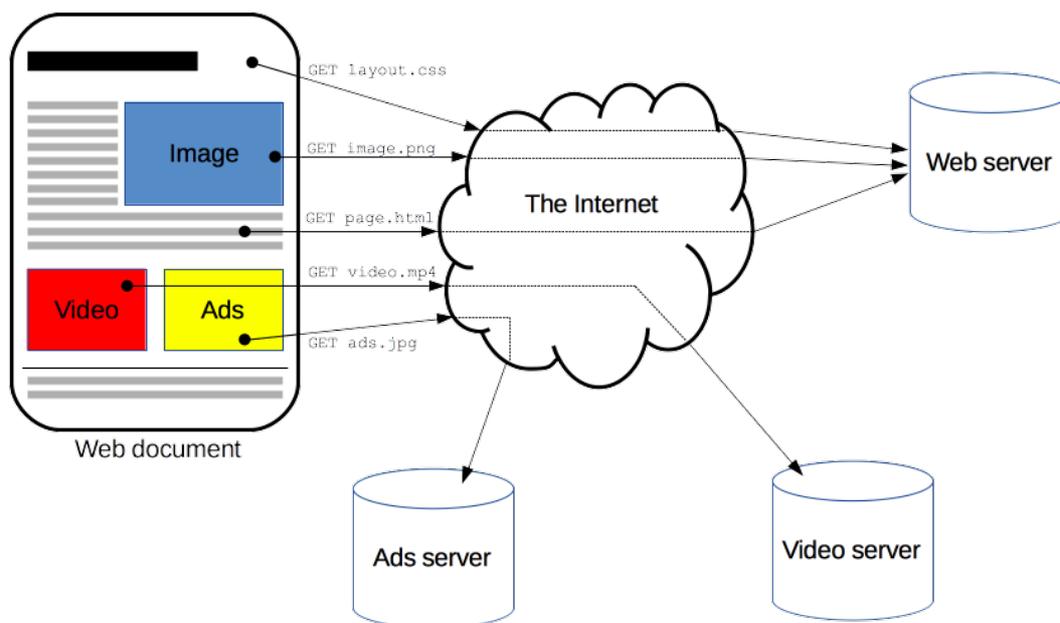
DSL is incorrect. Digital subscriber line is a family of technologies that are used to transmit digital data over telephone lines. In telecommunications marketing, the term DSL is widely understood to mean asymmetric digital subscriber line, the most commonly installed DSL technology, for Internet access.

Dial-up is incorrect. A dial-up connection is established when two or more communication devices use a public switched telephone network (PSTN) to connect to an Internet service provider (ISP).

Question 36. You have been tasked to configure the firewall of your company's network. Your project manager wants to prevent all the web traffic, coming from/to your network. Which of the following ports should you block at the firewall if you want to prevent the web traffic? (Choose all that apply.)

- (A) 21
- (B) 22
- (C) 80
- (D) 443
- (D) 110

Explanation 36. 80 and 443 are the correct answers. The HTTP protocol uses the 80 port number. HTTP is a protocol that allows the fetching of resources, such as HTML documents. It is the foundation of any data exchange on the Web and it is a client-server protocol, which means requests are initiated by the recipient, usually the Web browser. A complete document is reconstructed from the different sub-documents fetched, for instance text, layout description, images, videos, scripts, and more.



The HTTPS protocol uses the 443 port number. Hypertext transfer protocol secure (HTTPS) is the secure version of HTTP, which is the primary protocol used to send data between a web browser and a website. HTTPS is encrypted in order to increase the security of data transfer.

The FTP protocol uses the 21 port number. The File Transfer Protocol (FTP) is a standard network protocol used for the transfer of computer files between a client and a server on a computer network.

The SSH protocol uses the 22 port number. SSH (Secure Socket Shell) is a network protocol that gives users, particularly system administrators, a secure way to access a computer over an unsecured network. So you can use SSH to connect to a remote device in a secure way.

The POP3 protocol uses the 110 port number. Post Office Protocol version 3 (POP3) is a standard mail protocol used to receive emails from a remote server to a local email client.

POP3 allows you to download email messages on your local computer and read them even when you are offline. Note, that when you use POP3 to connect to your email account, messages are downloaded locally and removed from the email server.

Question 37. You have been joined a team of 2x network designers and 2x network engineers for the new project. The project is to design and implement a solution for a newly opened hotel to allow guests to connect (wirelessly) to the internet after the check-in process. Which of the following devices would allow the guests to connect their laptops to the hotel's network after the check-in?

- (A) Router
- (B) Access point**
- (C) Switch
- (D) Firewall

Explanation 37. **Access point is the correct answer.** An access point is a device that creates a wireless local area net-

work, or WLAN, usually in an office or large building. An access point connects to a wired router, switch, or hub via an Ethernet cable, and projects a Wi-Fi signal to a designated area.

Router is incorrect. A router is a device that communicates between the internet and the devices in your home that connects to the internet. As its name implies, it “routes” traffic between the devices and the internet.

Switch is incorrect. Switches facilitate the sharing of resources by connecting together all the devices, including computers, printers, and servers, in a small business network. Thanks to the switch, these connected devices can share information and talk to each other, regardless of where they are in a building or on a campus.

Firewall is incorrect. A firewall is a network security device that monitors incoming and outgoing network traffic and decides whether to allow or block specific traffic based on a defined set of security rules.

Question 38. You have been selected to decide which of the following devices your company will choose in order to detect and prevent identified threats for possible malicious incidents by continuously monitoring your company's network.

- (A) IDS
- (B) DHCP
- (C) DNS
- (D) IPS**

Explanation 38. IPS is the correct answer. An Intrusion Prevention System (IPS), also known as intrusion detection prevention system (IDPS), is a technology that keeps an eye on a network for any malicious activities attempting to exploit a known vulnerability.

An Intrusion Prevention System's main function is to identify any suspicious activity and either detect and allow (IDS) or prevent (IPS) the threat.

IDS is incorrect. An Intrusion Detection System (IDS) is a software application or hardware appliance that monitors traffic moving on networks and through systems to search for suspicious activity and known threats, sending up alerts when it finds such items.

IDS doesn't alter the network packets in any way, whereas IPS prevents the packet from delivery based on the contents of the packet, much like how a firewall prevents traffic by IP address.

DHCP is incorrect. Dynamic Host Configuration Protocol (DHCP) is a client/server protocol that automatically provides an Internet Protocol (IP) host with its IP address and other related configuration information such as the subnet mask and default gateway.

DNS is incorrect. The Domain Name System (DNS) is the phonebook of the Internet. Humans access information online through domain names, like examsdigest.com or jobsdigest.io. Web browsers interact through Internet Protocol (IP) addresses. DNS translates domain names to IP addresses so browsers can load Internet resources.

Each device connected to the Internet has a unique IP address that other machines use to find the device. DNS servers eliminate the need for humans to memorize IP addresses such as 192.168.1.1 (in IPv4), or more complex newer alphanumeric IP addresses such as 2400:cb00:2048:1::c629:d7a2 (in IPv6).

Question 39. The switch that connects the accounting department with the internet is experiencing interruption at intervals. All the accounting department can't connect on the internet with a steady connection. You think that the issue is being caused by the switch's motherboard, not getting the proper amount of power to it. Which of the following tools should you use to troubleshoot the issue and determine if the proper amount of power is being supplied to the switch's motherboard?

- (A) Crimper
- (B) Multimeter**
- (C) Cable tester
- (D) Punchdown tool

Explanation 39. Multimeter is the correct answer. A multimeter is a measurement tool absolutely necessary in electronics. It combines three essential features: a voltmeter, ohmmeter, and ammeter, and in some cases continuity.

A multimeter allows you to understand what is going on in your circuits. Whenever something in your circuit isn't working, the multimeter will help you troubleshooting.



Here's some situations in electronics projects that you'll find the multimeter useful:

- is the switch on?
- is this wire conducting the electricity or is it broken?
- how much current is flowing through this led?
- how much power do you have left on your batteries?

Crimper is incorrect. A crimping tool is a device used to con-join two pieces of metal by deforming one or both of them to hold each other. The result of the tool's work is called a crimp. An example of crimping is affixing a connector to the end of a cable. For instance, network cables and phone cables are cre-

ated using a crimping tool to join RJ-45 and RJ-11 connectors to both ends of phone or Cat 5 cable.



Cable tester is incorrect. A cable tester is a device used to test the strength and connectivity of a particular type of cable or other wired assemblies. There are many different types of cable testers. Each of them can test a specific type of cable or wire (some may be able to test different types of cables or wires).

A cable tester can test whether a cable or wire is set up properly, connected correctly, and the communication strength between the source and destination.



Punchdown tool is incorrect. A punch down tool, also called a krone tool, is a hand tool used to connect telecommunications and network wires to a patch panel, punch down block, keystone module, or surface mount box.



Question 40. Which of the following addresses are valid Class C network IDs? (Choose two answers)

(A) 195.0.0.0

(B) 22.22.3.0

(C) 222.0.0.0

(D) 191.255.255.0

(E) 127.0.0.0

Explanation 40. **195.0.0.0 and 222.0.0.0 are the correct answers.** Class C networks have the first octet in the range of 192–223, inclusive, and their network IDs have a 0 in the last three octets.

Class A networks have the first octet in the range of 1–126 and use a default subnet mask of 255.0.0.0.

The address 22.22.3.0 is a Class A network.

Class B networks have 128–191 as their first octet and use a default subnet mask of 255.255.0.0.

The address 191.255.255.0 is a Class B network.

The IP address range 127.0.0.0 – 127.255.255.255 is reserved for loopback and they are used for testing purposes.

The address 127.0.0.0 is a loopback address.

CHAPTER 3

HARDWARE

Questions 41-60

Question 41. You just start reading about virtualization, and you want to apply what you will learn to get some hands-on experience running VMs on your system. The current workstation doesn't support VMs due to its limited specifications. Now you are thinking to upgrade your workstation. Which of the following components are the MOST important to upgrade if you want to run numerous VMs simultaneously? (Choose all that apply.)

- (A) CPU
- (B) NIC
- (C) SSD
- (D) HDD
- (E) RAM
- (F) GPU

Question 42. You have been asked to recommend a RAID solution that will help ensure little to no downtime, no data loss, increase speed, and improves performance over the current web server. You should consider that the webserver hosts I/O-intensive applications. Based on these requirements, which of the following RAID solutions should you recommend?

- (A) RAID 0
- (B) RAID 1
- (C) RAID 5
- (D) RAID 10

Question 43. You have been asked to install a network cable inside a conduit that will be placed underground and used to connect two buildings that are located about 2 km apart. Which of the following cable types should you choose?

- (A) Fiber
- (B) Unshielded twisted pair
- (C) Shielded twisted pair
- (D) Coaxial

Question 44. You are attempting to install a full-sized PCIe network interface card into a 2U server, but the height of the 2U system is 3.5". You need to find a way to allow the addition of feature cards in a horizontal position (instead of a standard vertical position). Which of the following do you need to plug into the system board to provide additional slots for adapter cards?

- (A) Network interface card
- (B) eSata card
- (C) Riser card
- (D) USB expansion card

Question 45. You want to upgrade the workstation with more internal storage in order to install additional applications, and store movies, videos, and photos. Which of the following is the BEST storage solution to meet your need to store more data while maintaining fast data access speeds?

- (A) 4TB NAS
- (B) 1TB SSD
- (C) 10TB SAN
- (D) 4TB HDD

Question 46. Your manager asks you to install a new workstation following the requirement below. The workstation will only be used to remotely connect to a centralized server in order to run all of the required applications. Which of the following is the BEST type of workstation to install?

- (A) Thin client
- (B) Thick client
- (C) Virtualized workstation
- (D) Fat client

Question 47. You are working in the IT department for a large shipping company. The company needs to buy a device that allows them to automatically read information about the products they receive from their customers in order to keep them organized. Which of the following devices should the company buy to BEST meet this requirement?

- (A) Speakers
- (B) Barcode reader
- (C) Smart card reader
- (D) Magnetic reader

Question 48. What type of cable is most commonly used to terminate a serial connection to a modem?

- (A) Lightning
- (B) RJ-45
- (C) DB-9
- (D) RJ-11

Question 49. You've just set up your new home office. As part of your job, you need to use two, sometimes three, computers at your work station. However, setting up three monitors, three keyboards, and three mice is making your desk far too crowded. Plus, there's the additional hassle of moving around to use each computer. Which of the following device should you use that allows you to use multiple computers with one set of keyboard, monitor, and mouse?

- (A) Signature pad
- (B) External storage drives
- (C) KVM
- (D) Projector

Question 50. Which of the following is the BEST video cable that would you use to watch video content from your Laptop on your TV?

- (A) Shielded twisted pair
- (B) VGA
- (C) HDMI
- (D) SATA

Question 51. You are building a video editing/graphic design PC in order to support all the Adobe Suite's software. The computer needs a high-end processor, lots of RAM, and a dedicated high-end graphics card. The graphics card will be installed in one of your expansion slots on your motherboard. Which of the following motherboard connections will most likely be used to connect the graphics card?

- (A) Riser card
- (B) IDE
- (C) SATA
- (D) PCIe

Question 52. You want to terminate a coaxial cable, which of the following connector should you pick to terminate it?

- (A) RJ-11
- (B) RJ-45
- (C) Molex
- (D) RG-59

Question 53. You have been asked to install a network cable in the crawl space between the ceiling in your office and the roof. You need to choose the right type of cable to ensure you are not violating the local fire codes. Which of the following cable types should you choose?

- (A) Coaxial
- (B) Fiber
- (C) Plenum
- (D) Unshielded twisted pair

Question 54. Which of the following types of connectors are used to terminate telephone (phone line) cable?

- (A) Micro-USB
- (B) Mini-USB
- (C) RJ-11
- (D) USB-C

Question 55. Your company expands its data center and they ask you to find a way to ensure that the memory from the new servers can continue working even if there is an issue that corrupts data held within the memory modules. Which of the following types of memory should you select for the new data center?

- (A) Error-correcting code
- (B) Single channel
- (C) Double channel
- (D) Triple channel

Question 56. Which of the following CPU features pushing your computer components harder and faster than the manufacturer designed them to go?

- (A) Virtualization
- (B) Overclocking
- (C) Hyperthreading
- (D) Multicore

Question 57. You have just bought the new MacBook Pro that comes without a wired network slot. It has only type-c ports and one USB port. Which of the following devices will you buy to connect to the internet using a cable?

- (A) DVI to HDMI
- (B) DVI to VGA
- (C) USB to Ethernet
- (D) USB to HDMI

Question 58. You are building a small bitcoin mining farm at your home. The workstations will have multiple graphics cards and lots of memory. The computers are expected to generate a lot of heat during the mining process. Which of the following cooling mechanism systems would mitigate all of the heat produced?

- (A) Fans
- (B) Heat sink
- (C) Liquid
- (D) Thermal paste

Question 59. Your coworker wants to print a sheet of paper on both sides (front and back) automatically using the multi-function printer (MFP) of your company. Which of the following settings should your co-worker select in the printer settings?

- (A) Collate
- (B) Duplex
- (C) Orientation
- (D) Quality

Question 60. Your coworker wants to print a spreadsheet horizontally on a piece of paper instead of vertically using the multi-function printer (MFP) of your company. Which of the following settings should your co-worker select in the printer settings?

- (A)** Collate
- (B)** Duplex
- (C)** Orientation
- (D)** Quality

Answers 41-60

Question 41. You just start reading about virtualization, and you want to apply what you will learn to get some hands-on experience running VMs on your system. The current workstation doesn't support VMs due to its limited specifications. Now you are thinking to upgrade your workstation. Which of the following components are the MOST important to upgrade if you want to run numerous VMs simultaneously? (Choose all that apply.)

- (A) CPU
- (B) NIC
- (C) SSD
- (D) HDD
- (E) RAM
- (F) GPU

Explanation 41. CPU and RAM are the correct answers. To increase the performance of your workstation to run multiple VM machines you should definitely maximize the CPU and the RAM. These two are the most important components in order to have a fully-virtualized machine to support numerous VMs.

Question 42. You have been asked to recommend a RAID solution that will help ensure little to no downtime, no data loss, increase speed, and improves performance over the current web server. You should consider that the webserver hosts I/O-intensive applications. Based on these requirements, which of the following RAID solutions should you recommend?

- (A) RAID 0
- (B) RAID 1
- (C) RAID 5
- (D) RAID 10**

Explanation 42. RAID 10 is the correct answer. RAID 10, also known as RAID 1+0, is a RAID configuration that combines disk mirroring and disk striping to protect data. It requires a minimum of four disks and stripes data across mirrored pairs. RAID 10 provides data redundancy and improves performance, and is a good option for I/O-intensive applications — including email, web servers, databases, and operations that require high disk performance — and organizations that require little to no downtime.

RAID 0 is incorrect. RAID 0 doesn't provide any data protection; its sole purpose is to enhance drive access performance. It does that by spreading the data out across two or more drives

so that multiple read/write heads on the drives can write or access portions of data simultaneously, thus speeding up overall processing.

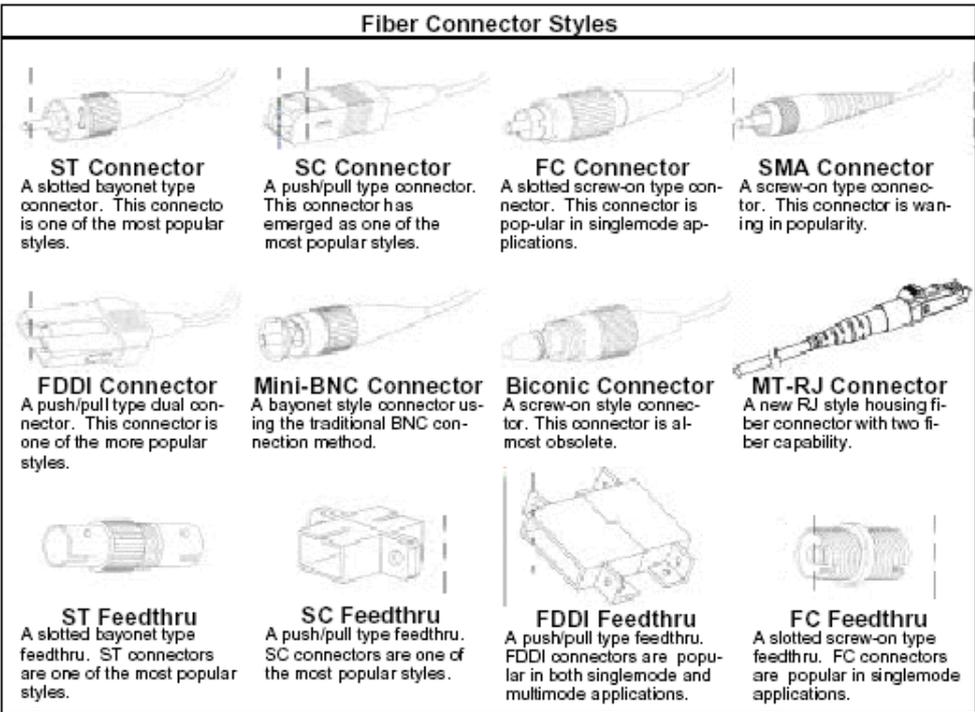
RAID 1 is incorrect. A RAID 1 configuration provides only data protection by copying data from one drive to another. Data is fully protected as the mirror copy is available if the originating drive is disabled or unavailable. Because it makes a full duplicate of the data, RAID 1 requires twice as much storage capacity as required by the original data.

RAID 5 is incorrect. RAID 5 is a redundant array of independent disks configuration that uses disk striping with parity. Because data and parity are striped evenly across all of the disks, no single disk is a bottleneck. Striping also allows users to reconstruct data in case of a disk failure. It has more usable storage than RAID 1 and RAID 10 configurations and provides performance equivalent to RAID 0.

Question 43. You have been asked to install a network cable inside a conduit that will be placed underground and used to connect two buildings that are located about 2 km apart. Which of the following cable types should you choose?

- (A) **Fiber**
- (B) Unshielded twisted pair
- (C) Shielded twisted pair
- (D) Coaxial

Explanation 43. **Fiber is the correct answer.** A fiber optic cable is a network cable that contains strands of glass fibers inside an insulated casing. They're designed for long-distance, high-performance data networking, and telecommunications. Compared to wired cables, fiber optic cables provide higher bandwidth and transmit data over longer distances.



Unshielded twisted pair is incorrect. Unshielded twisted pair (UTP) cables are widely used in the computer and telecommunications industry as Ethernet cables and telephone wires. In a UTP cable, conductors which form a single circuit are twisted around each other in order to cancel out electromagnetic interference (EMI) from external sources.

Shielded twisted pair is incorrect. STP is similar to unshielded twisted pair (UTP); however, it contains an extra foil wrapping or copper braid jacket to help shield the cable signals from interference. STP cables are costlier when compared to UTP, but has the advantage of being capable of supporting higher transmission rates across longer distances.

Coaxial is incorrect. Coaxial cable is a type of copper cable specially built with a metal shield and other components engineered to block signal interference. It is primarily used by cable TV companies to connect their satellite antenna facilities to customer homes and businesses. It is also sometimes used by telephone companies to connect central offices to telephone poles near customers.

Question 44. You are attempting to install a full-sized PCIe network interface card into a 2U server, but the height of the 2U system is 3.5". You need to find a way to allow the addition of feature cards in a horizontal position (instead of a standard vertical position). Which of the following do you need to plug into the system board to provide additional slots for adapter cards?

- (A) Network interface card
- (B) eSata card
- (C) Riser card**
- (D) USB expansion card

Explanation 44. Riser card is the correct answer. A riser card is a board that plugs into the system board and provides additional slots for adapter cards. Because it rises above the system board, it enables you to connect additional adapters to the system in an orientation that is parallel to the system board and save space within the system case.

Riser cards are used in rack-mount server and industrial computer applications. In 1U and 2U rack-mount computer systems, riser cards are integrated into the system to allow the addition of feature cards in a horizontal position (instead of a standard vertical position). This is due to the height limitations of a 1U and 2U system which are 1.75" and 3.5" respectively.

Network interface card is incorrect. A network interface card

(NIC) is a hardware component without which a computer cannot be connected over a network. It is a circuit board installed in a computer that provides a dedicated network connection to the computer.

eSATA card is incorrect. eSATA is a SATA connector accessible from outside the computer, to provide a signal (but not power) connection for external storage devices. eSATAp combines the functionality of an eSATA and a USB port, and a source of power in a single connector.

USB expansion card is incorrect. USB expansion cards allow users to expand the number of USB ports on a computer through an available PCI Express port.

Question 45. You want to upgrade the workstation with more internal storage in order to install additional applications, and store movies, videos, and photos. Which of the following is the BEST storage solution to meet your need to store more data while maintaining fast data access speeds?

- (A) 4TB NAS
- (B) 1TB SSD**
- (C) 10TB SAN
- (D) 4TB HDD

Explanation 45. 1TB SSD is the correct answer. A solid-state drive (SSD) is a newer, faster type of device that stores data on instantly-accessible memory chips. So, the SSD is the best storage solution to meet your need to store more data while maintaining fast data access speeds.

4TB NAS and 10TB SAN are incorrect. A NAS is a single storage device that serves files over Ethernet and is relatively inexpensive and easy to set up, while a SAN is a tightly coupled network of multiple devices that work with block-based data and is more expensive and complex to set up and manage. These options aren't internal storage solutions to meet your need.

4TB HDD is incorrect. A hard disk drive (HDD) is an old-school storage device that uses mechanical platters and a moving read/write head to access data.

Question 46. Your manager asks you to install a new workstation following the requirement below. The workstation will only be used to remotely connect to a centralized server in order to run all of the required applications. Which of the following is the BEST type of workstation to install?

- (A) Thin client**
- (B) Thick client**
- (C) Virtualized workstation**
- (D) Fat client**

Explanation 46. Thin client is the correct answer. A thin client is a simple computer that has been optimized for establishing a remote connection with a server-based computing environment. The server does most of the work, which can include launching software programs, performing calculations, and storing data.

Thick client and fat client are incorrect. Thick client known as a fat client, also called heavy clients, are full-featured computers that are connected to a network. Unlike thin clients, which lack hard drives and other features, thick clients are functional whether they are connected to a network or not. Specifically, it is a networked computer system with most resources installed locally, rather than distributed over a network.

Virtualized workstation is incorrect. A Virtualized workstation is another term for a client device connecting to a virtual machine (VM) that hosts desktops and applications. These virtual machines work on top of hypervisor software that lies on a single powerful hardware.

Question 47. You are working in the IT department for a large shipping company. The company needs to buy a device that allows them to automatically read information about the products they receive from their customers in order to keep them organized. Which of the following devices should the company buy to BEST meet this requirement?

- (A) Speakers
- (B) Barcode reader**
- (C) Smart card reader
- (D) Magnetic reader

Explanation 47. Barcode reader is the correct answer. A barcode reader, is a device used to capture and read information contained in a barcode. Barcodes are generally used to help track inventory, but there are many more possibilities and interesting ways to use them.

Speaker is incorrect. A computer speaker is an output hardware device that connects to a computer to generate sound. The signal used to produce the sound that comes from a computer speaker is created by the computer's sound card.

Smart card reader is incorrect. A smart card reader is a device that is used to read a smart card. A smart card is a plastic badge that incorporates an installed coordinated circuit that can be either a safe micro-controller or a memory chip. These cards have the capacity to store a lot of information, do encryption and validation as well. These cards include your credit/debit card, medical insurance among others.

Magnetic reader is incorrect. A magnetic reader, also called a magstripe reader, is a hardware device that reads the information encoded in the magnetic stripe located on the back of a plastic badge. Magnetic stripe readers can be read by a computer program through a serial port , USB connection, or keyboard wedge , and are generally categorized by the way they read a badge. For instance, insertion readers require that the badge be inserted into the reader and then pulled out. Swipe readers require that the badge pass completely through the reader.

Question 48. What type of cable is most commonly used to terminate a serial connection to a modem?

- (A) Lightning
- (B) RJ-45
- (C) DB-9
- (D) RJ-11

Explanation 48. **DB-9 is the correct answer.** A DB-9 is usually used to terminate an RS-232 connection on a serial cable.



Lightning is incorrect. The Lightning connector is used to connect Apple mobile devices like iPhones, iPads, and iPods to host computers, external monitors, cameras, USB battery chargers, and other peripherals.



RJ-45 is incorrect. An RJ-45 connector is used to terminate an Ethernet cable.



RJ-11 is incorrect. An RJ-11 is usually used to terminate a phone line.



Question 49. You've just set up your new home office. As part of your job, you need to use two, sometimes three, computers at your work station. However, setting up three monitors, three keyboards, and three mice is making your desk far too crowded. Plus, there's the additional hassle of moving around to use each computer. Which of the following device should you use that allows you to use multiple computers with one set of keyboard, monitor, and mouse?

- (A) Signature pad
- (B) External storage drives
- (C) **KVM**
- (D) Projector

Explanation 49. KVM is the correct answer. KVM switch is a device that improves productivity, saves space, and money by allowing you to use multiple computers with one set of keyboard, monitor, and mouse. The exclusive feature offers IT, administrators, centralized real-time updates, and maintenance.

Signature pad is incorrect. A signature capture pad is a device that electronically captures a person's handwritten signature on an LCD touchpad using a pen-type stylus.

External storage drives is incorrect. External storage comprises devices that store information outside a computer. Such devices may be permanently attached to the computer, might be removable or may use removable media.

Projector is incorrect. A projector is an output device that takes images generated by a computer or Blu-ray player and reproduces them by projection onto a screen, wall, or another surface.

Question 50. Which of the following is the BEST video cable that would you use to watch video content from your Laptop on your TV?

- (A) Shielded twisted pair
- (B) VGA
- (C) HDMI**
- (D) SATA

Explanation 50. HDMI is the correct answer. HDMI short for High Definition Multimedia is a standard and an interface or port for transmitting high definition digital video and audio data between devices. It's used to connect HDTVs, Smart TVs, laptops, set-top-boxes, projectors, Blu-Ray, DVD players.

Shielded twisted pair is incorrect. STP is similar to unshielded twisted pair (UTP); however, it contains an extra foil wrapping or copper braid jacket to help shield the cable signals from interference. STP cables are costlier when compared to UTP, but has the advantage of being capable of supporting higher transmission rates across longer distances.

VGA is incorrect. Even if a Video Graphic Array (VGA) cable is used primarily to link a computer to a display device is not considered the BEST video cable to do it.

SATA is incorrect. Serial Advanced Technology Attachment (SATA) or Serial ATA cables are used to connect devices in computer cable assemblies, such as storage devices, for example. The SATA technology itself is a connector interface primarily used for computer bus connections in storage applications. In this application, the cables are used to connect a mass storage device (e.g. hard disk drives, optical drives, solid-state memory drives) to a host bus adapter such as a motherboard.

Question 51. You are building a video editing/graphic design PC in order to support all the Adobe Suite's software. The computer needs a high-end processor, lots of RAM, and a dedicated high-end graphics card. The graphics card will be installed in one of your expansion slots on your motherboard. Which of the following motherboard connections will most likely be used to connect the graphics card?

- (A) Riser card
- (B) IDE
- (C) SATA
- (D) **PCIe**

Explanation 51. PCIe is the correct answer. PCIe (peripheral component interconnect express) is an interface standard for connecting high-speed components. Every desktop PC motherboard has a number of PCIe slots you can use to add GPUs (aka video cards aka graphics cards), RAID cards, Wi-Fi cards or SSD (solid-state drive) add-on cards. The types of PCIe slots available in your PC will depend on the motherboard you buy.

Riser card is incorrect. A riser card is a board that plugs into the system board and provides additional slots for adapter cards. Because it rises above the system board, it enables you to connect additional adapters to the system in an orientation that is parallel to the system board and save space within the system case.

IDE is incorrect. IDE (Integrated Drive Electronics) is a standard electronic interface used between a computer motherboard's data paths or bus and the computer's disk storage devices.

SATA is incorrect. SATA Stands for "Serial Advanced Technology Attachment," or "Serial ATA." It is an interface used to connect ATA hard drives to a computer's motherboard. SATA transfer rates start at 150MBps, which is significantly faster than even the fastest 100MBps ATA/100 drives.

Question 52. You want to terminate a coaxial cable, which of the following connector should you pick to terminate it?

- (A) RJ-11
- (B) RJ-45
- (C) Molex
- (D) **RG-59**

Explanation 52. **RG-59 is the correct answer.** RG-59 is a specific type of coaxial cable, often used for low-power video and RF signal connections. RG-59 is often used at baseband video frequencies, such as composite video. It may also be used for broadcast frequencies, but its high-frequency losses are too high to allow its use over long distances; in these applications, RG-6 or RG-11 is used instead.



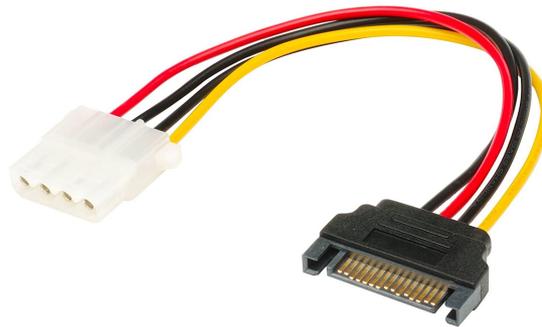
RJ-11 is incorrect. An RJ-11 is usually used to terminate a phone line.



RJ-45 is incorrect. An RJ-45 connector is used to terminate an Ethernet cable.



Molex is incorrect. These “Molex” connectors bring DC power to the drives inside a PC case. The large one on the right is used for disk, CD-ROM, and DVD drives, while the small connector is used for floppy drives and other devices.



Question 53. You have been asked to install a network cable in the crawl space between the ceiling in your office and the roof. You need to choose the right type of cable to ensure you are not violating the local fire codes. Which of the following cable types should you choose?

- (A) Coaxial
- (B) Fiber
- (C) Plenum**
- (D) Unshielded twisted pair

Explanation 53. **Plenum is the correct answer.** Plenum rated cable has a special insulation that has smoke and low flame

characteristics. It is mandated to be installed in any “air handling” space. For instance, most large office buildings use the ceiling to return air to the AC unit.

Moreover, the space that builds with an intention to handle the airflow is loaded with oxygen. If cable installation is not done properly and efficiently, it might be highly risky. At that point, the use of plenum cables ensures safety. However, the use of plenum spaces may pose a serious hazard in case of fire. Once the fire reaches the plenum space, few barriers exist to contain smoke and flames.

Coaxial is incorrect. Coaxial cable is a type of copper cable specially built with a metal shield and other components engineered to block signal interference. It is primarily used by cable TV companies to connect their satellite antenna facilities to customer homes and businesses. It is also sometimes used by telephone companies to connect central offices to telephone poles near customers.

Fiber is incorrect. A fiber optic cable is a network cable that contains strands of glass fibers inside an insulated casing. They’re designed for long-distance, high-performance data networking, and telecommunications. Compared to wired cables, fiber optic cables provide higher bandwidth and transmit

data over longer distances.

Unshielded twisted pair is incorrect. Unshielded twisted pair (UTP) cables are widely used in the computer and telecommunications industry as Ethernet cables and telephone wires. In a UTP cable, conductors which form a single circuit are twisted around each other in order to cancel out electromagnetic interference (EMI) from external sources.

Question 54. Which of the following types of connectors are used to terminate telephone (phone line) cable?

- (A) Micro-USB
- (B) Mini-USB
- (C) **RJ-11**
- (D) USB-C

Explanation 54. **RJ-11 is the correct answer.** RJ-11 is incorrect. An RJ-11 is usually used to terminate a phone line.



micro-USB is incorrect. A micro-USB is a miniature USB, and most likely (if you have an Android phone at least), you have one at the end of your smartphone or tablet charging cord. This is the piece that plugs into the micro-USB port on your smartphone or tablet.



Mini-USB is incorrect. The mini USB cable is most commonly used to charge mobile devices, but can also be used to transfer data between computers with at least one USB port.



USB-C is incorrect. The USB-C connector looks similar to a micro USB connector at first glance, though it's more oval in shape and slightly thicker to accommodate its best feature: flippability.



Question 55. Your company expands its data center and they ask you to find a way to ensure that the memory from the new servers can continue working even if there is an issue that corrupts data held within the memory modules. Which of the following types of memory should you select for the new data center?

- (A) Error-correcting code**
- (B) Single channel**
- (C) Double channel**
- (D) Triple channel**

Explanation 55. Error-correcting code is the correct answer. Error-correcting code (ECC) memory is a type of computer data storage specifically designed to detect, correct and monitor most common kinds of interior data corruption. As data

is processed, ECC memory equipped with a special algorithm constantly scans and corrects single-bit memory errors. This ensures that no erroneous or corrupt data is accidentally stored in memory. It is typically found and used in systems with high-value data such as scientific and financial computing systems.

Question 56. Which of the following CPU features pushing your computer components harder and faster than the manufacturer designed them to go?

- (A) Virtualization
- (B) Overclocking**
- (C) Hyperthreading
- (D) Multicore

Explanation 56. Overclocking is the correct answer. Overclocking refers to pushing your computer components harder and faster than the manufacturer designed them to go. Overclocking can certainly speed up your system (and save you some cash in the process), but only if you do it right.

Virtualization is incorrect. CPU virtualization emphasizes performance and runs directly on the processor whenever possible. The underlying physical resources are used whenever possible and the virtualization layer runs instructions only as need-

ed to make virtual machines operate as if they were running directly on a physical machine.

Hyperthreading is incorrect. Hyper-Threading Technology is a hardware innovation that allows more than one thread to run on each core. More threads means more work can be done in parallel.

Multicore is incorrect. A multicore processor is a single integrated circuit (a.k.a., chip multiprocessor or CMP) that contains multiple core processing units, more commonly known as cores. Multicore processing is typically commonplace because it offers advantages such as energy efficiency, concurrency, performance and isolation.

Question 57. You have just bought the new MacBook Pro that comes without a wired network slot. It has only type-c ports and one USB port. Which of the following devices will you buy to connect to the internet using a cable?

- (A) DVI to HDMI
- (B) DVI to VGA
- (C) **USB to Ethernet**
- (D) USB to HDMI

Explanation 57. USB to Ethernet is the correct answer. Ethernet ports are used to connect computers to a wired local area network or to a modem that provides a broadband Internet connection. While most computers used in a business environment have one or more Ethernet ports available, some lighter notebook and tablet computers are designed for wireless connectivity with no Ethernet port included to save on system space.

When you require a Ethernet connection and have no available ports, **a USB to Ethernet adapter** can be plugged into the USB port to provide you with Ethernet connectivity. These adapters are plug-and-play-ready and, when connected, provide for full-speed Ethernet data transfers. All that's required to complete the network connection is to plug an Ethernet cable into the adapter and then into a network hub, router or modem.

The rest options are incorrect because none of them are related to internet connectivity.

Question 58. You are building a small bitcoin mining farm at your home. The workstations will have multiple graphics cards and lots of memory. The computers are expected to generate a lot of heat during the mining process. Which of the following cooling mechanism systems would mitigate all of the heat produced?

- (A) Fans
- (B) Heat sink
- (C) Liquid**
- (D) Thermal paste

Explanation 58. Liquid is the correct answer. Liquid cooling is the best way to cool a CPU because water transfers heat much more efficiently than air. Liquid cooling also makes your PC run quieter because you won't have fans constantly running at a high RPM. However, liquid cooling a PC can also be dangerous if water leaks onto hardware.

Fans is incorrect. Fans help pull and blow hot air off the processor, helping keep it cooler. Power supply fan – a fan located inside a power supply. The power supply fan blows hotter air out of the power supply and out of the computer.

Heat sink is incorrect. A heat sink is a piece of metal that sits on top of a computer chip such as a CPU and draws power away from components by letting it rise through a set of fins. By themselves, heatsinks are passive; they have no moving parts. However, in most cases—especially with desktop CPUs and GPUs—the heatsink is combined with a fan that blows the hot air away or a liquid cooling solution that carries the heat away through pipes.

Thermal paste is incorrect. Thermal paste is a sticky mass in consistency, which is the most frequently used method of heat transfer between CPUs and heat sinks.

Question 59. Your coworker wants to print a sheet of paper on both sides (front and back) automatically using the multi-function printer (MFP) of your company. Which of the following settings should your co-worker select in the printer settings?

- (A) Collate
- (B) Duplex**
- (C) Orientation
- (D) Quality

Explanation 59. **Duplex is the correct answer.** Duplex printing is a feature of some computer printers and multi-function

printers (MFPs) that allows the printing of a sheet of paper on both sides automatically. Print devices without this capability can only print on a single side of paper, sometimes called single-sided printing or simplex printing.

Collate is incorrect. Collate means that when printing more than one copy of a multi-page document, the copies will print all pages of each copy before printing the second copy. They are sorted into a correctly assembled sequence – and so if you are printing multiple copies it will then print them as sets of documents, not as single pages.

It's frustrating when you need to print a document 20 times so that you can share a copy with 20 people for example, only for the printer to put 20 page one's into a pile, then 20 pages two's and so on. This would mean that afterwards you would need to sort them all into order so that you could hand them out. Collated printing would do this job for you.

Orientation is incorrect. As the name implies with the orientation setting you can change the page orientation to landscape or portrait.

Quality is incorrect because it changes the printing quality.

Question 60. Your coworker wants to print a spreadsheet horizontally on a piece of paper instead of vertically using the multi-function printer (MFP) of your company. Which of the following settings should your co-worker select in the printer settings?

- (A) Collate
- (B) Duplex
- (C) Orientation**
- (D) Quality

Explanation 60. Orientation is the correct answer. As the name implies with the orientation setting you can change the page orientation to landscape or portrait.

Collate is incorrect. Collate means that when printing more than one copy of a multi-page document, the copies will print all pages of each copy before printing the second copy. They are sorted into a correctly assembled sequence – and so if you are printing multiple copies it will then print them as sets of documents, not as single pages.

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Duplex is incorrect. Duplex printing is a feature of some computer printers and multi-function printers (MFPs) that allows the printing of a sheet of paper on both sides automatically. Print devices without this capability can only print on a single side of paper, sometimes called single-sided printing or simplex printing.

Quality is incorrect because it changes the printing quality.

CHAPTER 4

VIRTUALIZATION AND CLOUD COMPUTING

Questions 61-70

Question 61. Which of the following cloud concepts refers to mixed computing, storage, and services environment made up of on-premises infrastructure, private cloud services, and a public cloud?

- (A)** Mixed cloud
- (B)** All-in-one cloud
- (C)** Diverse cloud
- (D)** Hybrid cloud

Question 62. IaaS provides all the infrastructure to support web apps, including storage, web and application servers, and networking resources. Organizations can quickly deploy web apps on IaaS and easily scale infrastructure up and down when demand for the apps is unpredictable.

- (A)** TRUE
- (B)** FALSE

Question 63. Which of the following computing models offers services such as pay-as-you-go storage, networking, and virtualization and helps businesses to avoid investing in expensive on-site resources?

- (A) IaaS
- (B) SaaS
- (C) PaaS
- (D) On-premise

Question 64. Which cloud computing concept allows users to utilize additional computing resources such as storage capacity, computational speed, and software applications for the duration of a project, and then drop back to the previous level after the project is completed?

- (A) Resource pooling
- (B) On-demand
- (C) Rapid elasticity
- (D) Shared resources

Question 65. Which of the following cloud computing resources are MOST important when determining the performance of a cloud file-storage synchronization application?

- (A) CPU utilization
- (B) Disk speed
- (C) RAM utilization
- (D) I/O Bandwidth

Question 66. After successfully installed the new Linux server, you want to begin creating and provisioning virtual machines. Which of the following should you utilize to allow you to create and provision the virtual machines on the Linux server?

- (A) Hypervisor
- (B) Community cloud
- (C) Private cloud
- (D) Public cloud

Question 67. Which of the following cloud computing model should you use to develop a new app using pre-coded application components (workflow, security features, and search) in order to cut the development process in the half?

- (A) IaaS
- (B) SaaS
- (C) PaaS
- (D) Public

Question 68. Which of the following virtualization and cloud computing concepts describes a condition in which providers provide provisional and scalable services to multiple clients or customers?

- (A) Virtual NIC
- (B) Resource pooling
- (C) Rapid Elasticity
- (D) Metered

Question 69. To be able to use virtualization and have virtual machines running on a single workstation, you need to have a CPU that is specifically designed to support virtualization. Which of the following set of hardware extensions should you use, if you are using an Intel processor?

- (A) Virtual NIC
- (B) Hypervisor
- (C) AMD-V
- (D) VT

Question 70. To be able to use virtualization and have virtual machines running on a single workstation, you need to have a CPU that is specifically designed to support virtualization. Which of the following set of hardware extensions should you use, if you are using an Intel processor?

- (A) Virtual NIC
- (B) Hypervisor
- (C) AMD-V
- (D) VT

Answers 61-70

Question 61. Which of the following cloud concepts refers to mixed computing, storage, and services environment made up of on-premises infrastructure, private cloud services, and a public cloud?

- (A) Mixed cloud
- (B) All-in-one cloud
- (C) Diverse cloud
- (D) Hybrid cloud**

Explanation 61. **Hybrid cloud is the correct answer.** Hybrid cloud refers to mixed computing, storage, and services environment made up of on-premises infrastructure, private cloud services, and a public cloud—such as Amazon Web Services (AWS) or Microsoft Azure—with orchestration among the various platforms. Using a combination of public clouds, on-premises computing, and private clouds in your data center means that you have a hybrid cloud infrastructure.

A hybrid cloud architecture includes these characteristics:

1. Your on-premises data center, private and public cloud resources, and workloads are tied together under common data

management while staying distinct.

2. You can connect existing systems running on traditional architectures that run business-critical applications or contain sensitive data that might not be suited for the public cloud.

Question 62. IaaS provides all the infrastructure to support web apps, including storage, web and application servers, and networking resources. Organizations can quickly deploy web apps on IaaS and easily scale infrastructure up and down when demand for the apps is unpredictable.

(A) TRUE

(B) FALSE

Explanation 62. TRUE is the correct answer. Infrastructure as a service (IaaS) is an instant computing infrastructure, provisioned and managed over the internet. It's one of the four types of cloud services, along with software as a service (SaaS), platform as a service (PaaS), and serverless.

IaaS quickly scales up and down with demand, letting you pay only for what you use. It helps you avoid the expense and complexity of buying and managing your own physical servers and other datacenter infrastructure. Each resource is offered as a

separate service component, and you only need to rent a particular one for as long as you need it.

Question 63. Which of the following computing models offers services such as pay-as-you-go storage, networking, and virtualization and helps businesses to avoid investing in expensive on-site resources?

- (A) IaaS**
- (B) SaaS**
- (C) PaaS**
- (D) On-premise**

Explanation 63. IaaS is the correct answer. IaaS (Infrastructure as a Service) businesses offer services such as pay-as-you-go storage, networking, and virtualization. IaaS gives users cloud-based alternatives to on-premise infrastructure, so businesses can avoid investing in expensive on-site resources.

IaaS examples: AWS EC2, Rackspace, Google Compute Engine (GCE), Digital Ocean.

SaaS is incorrect. SaaS (Software as a Service) platforms make software available to users over the internet, usually for a

monthly subscription fee. With SaaS, you don't need to install and run software applications on your computer (or any computer). Everything is available over the internet when you log in to your account online.

SaaS examples: BigCommerce, Google Apps, Salesforce, Dropbox, MailChimp, ZenDesk, DocuSign, Slack, Hubspot.

PaaS is incorrect. A PaaS (Platform as a Service) vendor provides hardware and software tools over the internet, and people use these tools to develop applications. PaaS users tend to be developers. This means developers don't need to start from scratch when creating applications, saving them a lot of time (and money) on writing extensive code.

PaaS examples: AWS Elastic Beanstalk, Heroku, Windows Azure (mostly used as PaaS), Force.com, OpenShift, Apache Stratos, Magento Commerce Cloud.

On-premise is incorrect. On-premise means that a company keeps all of this IT infrastructure onsite, which is either managed by themselves or a third-party. So they don't use any cloud model.

Question 64. Which cloud computing concept allows users to utilize additional computing resources such as storage capacity, computational speed, and software applications for the duration of a project, and then drop back to the previous level after the project is completed?

- (A) Resource pooling
- (B) On-demand**
- (C) Rapid elasticity
- (D) Shared resources

Explanation 64. On-demand is the correct answer. On-demand computing is an enterprise-level model of technology by which a customer can purchase cloud services as and when needed. For example, if a customer needs to utilize additional servers for the duration of a project, they can do so and then drop back to the previous level after the project is completed.

On-demand computing makes computing resources such as storage capacity, computational speed and software applications available to users as needed for specific temporary projects, known or unexpected workloads, routine work, or long-term technological and computing requirements.

Resource pooling is incorrect. Resource pooling is a term

used in cloud computing environments to describe a condition in which providers provide provisional and scalable services to multiple clients or customers. These services can be customized to suit each client's requirements without doing changes being apparent to the client or end-user.

Rapid elasticity is incorrect. Rapid elasticity is a cloud computing term for scalable provisioning, or the ability to provide scalable services. Rapid elasticity allows users to automatically request additional space in the cloud or other types of services.

Shared resources is incorrect. Shared resource means that physical resources (such as computing, networking, storage) and services are shared, also the administrative functionality and support may also be shared.

Question 65. Which of the following cloud computing resources are MOST important when determining the performance of a cloud file-storage synchronization application?

- (A) CPU utilization
- (B) Disk speed
- (C) RAM utilisation
- (D) **I/O Bandwidth**

Explanation 65. I/O Bandwidth is the correct answer. I/O bandwidth is the measurement of the amount of input and output operations that can be performed within a given time. The higher the I/O bandwidth, the faster and more efficient a cloud file-storage synchronization application will become. Applications that rely on large amounts of reading and writing of data require a high amount of I/O bandwidth.

Question 66. After successfully installed the new Linux server, you want to begin creating and provisioning virtual machines. Which of the following should you utilize to allow you to create and provision the virtual machines on the Linux server?

- (A) Hypervisor**
- (B)** Community cloud
- (C)** Private cloud
- (D)** Public cloud

Explanation 66. Hypervisor is the correct answer. A hypervisor, also known as a virtual machine monitor or VMM, is software that creates and runs virtual machines (VMs). A hypervisor allows one host computer to support multiple guest VMs by virtually sharing its resources, such as memory and processing.

Hypervisors make it possible to use more of a system's available resources and provide greater IT mobility since the guest VMs are independent of the host hardware. This means they can be easily moved between different servers. Because multiple virtual machines can run off of one physical server with a hypervisor, a hypervisor reduces:

1. Space
2. Energy
3. Maintenance requirements

The rest options are incorrect as they are common cloud models.

Question 67. Which of the following cloud computing model should you use to develop a new app using pre-coded application components (workflow, security features, and search) in order to cut the development process in the half?

- (A) IaaS
- (B) SaaS
- (C) **PaaS**
- (D) Public

Explanation 67. **PaaS is the correct answer.** Platform as a

service (PaaS) is a complete development and deployment environment in the cloud, with resources that enable you to deliver everything from simple cloud-based apps to sophisticated, cloud-enabled enterprise applications.

PaaS offers the same advantages as IaaS. But its additional features—middleware, development tools, and other business tools—give you more advantages:

- 1. Cut coding time.** PaaS development tools can cut the time it takes to code new apps with pre-coded application components built into the platform, such as workflow, directory services, security features, search, and so on.
- 2. Add development capabilities without adding staff.** Platform as a Service components can give your development team new capabilities without needing to add staff having the required skills.

IaaS is incorrect. Infrastructure as a service (IaaS) is an instant computing infrastructure, provisioned and managed over the internet. It's one of the four types of cloud services, along with software as a service (SaaS), platform as a service (PaaS), and serverless.

IaaS quickly scales up and down with demand, letting you pay only for what you use. It helps you avoid the expense and complexity of buying and managing your own physical servers and other datacenter infrastructure.

SaaS is incorrect. Software as a service (SaaS) allows users to connect to and use cloud-based apps over the Internet. Common examples are email, calendaring, and office tools (such as Microsoft Office 365).

SaaS provides a complete software solution that you purchase on a pay-as-you-go basis from a cloud service provider. You rent the use of an app for your organization, and your users connect to it over the Internet, usually with a web browser.

All of the underlying infrastructure, middleware, app software, and app data are located in the service provider's data center. The service provider manages the hardware and software, and with the appropriate service agreement, will ensure the availability and the security of the app and your data as well.

Public cloud is incorrect. A public cloud is a type of computing in which a service provider makes resources available to the public via the internet. Resources vary by provider but may include storage capabilities, applications or virtual machines.

Public cloud allows for scalability and resource sharing that would not otherwise be possible for a single organization to achieve.

Question 68. Which of the following virtualization and cloud computing concepts describes a condition in which providers provide provisional and scalable services to multiple clients or customers?

- (A) Virtual NIC
- (B) Resource pooling**
- (C) Rapid Elasticity
- (D) Metered

Explanation 68. Resource pooling is the correct

answer. Resource pooling is a term used in cloud computing environments to describe a condition in which providers provide provisional and scalable services to multiple clients or customers. These services can be customized to suit each client's requirements without doing changes being apparent to the client or end-user.

Virtual NIC is incorrect. A virtual network adapter or network interface card (NIC) serves as the gateway between the server (virtual or physical) and the network.

Rapid elasticity is incorrect. Rapid elasticity is a cloud computing term for scalable provisioning, or the ability to provide scalable services. Rapid elasticity allows users to automatically request additional space in the cloud or other types of services.

Metered is incorrect. Metered services (also called pay-per-use) is any type of payment structure in which a customer has access to potentially unlimited resources but only pays for what they actually use.

Question 69. To be able to use virtualization and have virtual machines running on a single workstation, you need to have a CPU that is specifically designed to support virtualization. Which of the following set of hardware extensions should you use, if you are using an Intel processor?

- (A) Virtual NIC
- (B) Hypervisor
- (C) AMD-V
- (D) VT**

Explanation 69. VT is the correct answer. Intel VT-x (previously known as Intel VT) is the implementation of an Intel Secure Virtual Machine for the x86 IA-32 and Intel 64 architec-

tures. The older designation, "Intel VT" (without the "x"), continues to be used by many BIOS menus.

VT-x is necessary for Intel systems in order to:

1. run domUs under Xen Hardware Virtual Machine (HVM) (as well as run a guest system under Windows).
2. run 64-bit guest systems under VMware.
3. to run virtualization with KVM.

Virtual NIC is incorrect. A virtual network adapter or network interface card (NIC) serves as the gateway between the server (virtual or physical) and the network.

Hypervisor is incorrect. A hypervisor, also known as a virtual machine monitor or VMM, is software that creates and runs virtual machines (VMs). A hypervisor allows one host computer to support multiple guest VMs by virtually sharing its resources, such as memory and processing.

AMD-V is incorrect. AMD-V (AMD virtualization) is a set of hardware extensions for the X86 processor architecture. Advanced Micro Dynamics (AMD) designed the extensions to perform repetitive tasks normally performed by software and improve resource use and virtual machine (VM) performance.

Question 70. To be able to use virtualization and have virtual machines running on a single workstation, you need to have a CPU that is specifically designed to support virtualization. Which of the following set of hardware extensions should you use, if you are using an Intel processor?

- (A) Virtual NIC
- (B) Hypervisor
- (C) **AMD-V**
- (D) VT

Explanation 70. **AMD-V is the correct answer.** AMD-V (AMD virtualization) is a set of hardware extensions for the X86 processor architecture. Advanced Micro Dynamics (AMD) designed the extensions to perform repetitive tasks normally performed by software and improve resource use and virtual machine (VM) performance.

Virtual NIC is incorrect. A virtual network adapter or network interface card (NIC) serves as the gateway between the server (virtual or physical) and the network.

Hypervisor is incorrect. A hypervisor, also known as a virtual machine monitor or VMM, is software that creates and runs virtual machines (VMs). A hypervisor allows one host computer to

support multiple guest VMs by virtually sharing its resources, such as memory and processing.

VT is incorrect. For Intel processors, they must support VT, or Virtualization Technology. If you are using an AMD processor, it should support AMD-V (AMD's virtualization technology).

CHAPTER 5

HARDWARE AND NETWORK TROUBLESHOOTING

Questions 71-90

Question 71. You have been hired to work as a network technician for 5 days at Amazon's event (AWS re:Inforce). One of the keynote speakers has submitted a trouble ticket stating that the projector connected to his workstation on the stage is not working properly. You look at the image being projected on the wall and notice it is dim, but the image appears to be displayed clearly and correctly. What should you do to resolve the issue as quickly as possible?

- (A) Replace the projector as it fails to operate properly
- (B) Increase the contrast on the projector
- (C) Replace the keynote speaker's workstation
- (D) Update the drives on the workstation

Question 72. Your friend Mike claims that his computer keeps rebooting itself without any warning message. Which of the following is the BEST action you should take to investigate and troubleshoot this issue?

- (A) Replace the power supply from the workstation
- (B) Format the hard drive of the workstation
- (C) Check the power supply from the workstation
- (D) Install a new operating system

Question 73. Which of the following is the second step of the CompTIA troubleshooting methodology?

- (A) Identify the problem
- (B) Establish a theory of probable cause
- (C) Test the theory to determine cause
- (D) Establish a plan of action to resolve the problem and implement the solution

Question 74. Your co-worker Emilie just open a new trouble ticket for you, stating that she is not able to connect to the internet. After a quick investigation, you have noticed she receives an IP address of 169.254.2.2. What is most likely the cause of this issue?

- (A) DHCP failure
- (B) Emilie's workstation is hacked
- (C) Malfunctioned NIC
- (D) DNS failure

Question 75. You just received a new troubleshooting ticket from your co-worker Marie. She is trying to connect on the internet (wirelessly) but she receives an error message that says "There is an IP address conflict with another system on the network". Which of the following options will resolve the issue?

- (A) Change the network interface card from Marie's laptop
- (B) Change the way she receives the IP address from static to dynamic using DHCP
- (C) Connect to the internet using Ethernet cable
- (D) Change the IP address manually

Question 76. Your co-worker tells you that he is having a problem accessing his email. What is the first step of the CompTIA troubleshooting methodology?

- (A) Gather information by asking questions
- (B) Establish a plan of action to resolve the problem
- (C) Document the issue
- (D) Establish a theory of probable cause

Question 77. One of your customers has some network-related issues. You have been dispatched to your customer's office to troubleshoot their network connectivity. You have asked the customer what the issue is and he replied, "They can't connect to the internet". Then you ask a few follow-up questions to better understand the situation and ask if the browser throws an error message. Which of the following steps of the CompTIA troubleshooting methodology best describes the actions you are currently taking?

- (A) Identify the problem
- (B) Establish a theory of probable cause
- (C) Test the theory to determine the cause
- (D) Document findings, actions, and outcomes

Question 78. You are setting up a new wireless network for the new department. You just finished the installation of the wireless access points and the configuration of the DHCP server. To test if everything works as expected you just turn the laptop on and connect to the network. Your laptop is automatically assigned an IP address of 192.168.1.2 from the DHCP server. On the terminal, you type the command `ping 192.168.1.1` to check if the default gateway responds, and sure enough, it works. You open Google Chrome and attempt to connect to `examsdigest.com`, but you cannot connect, instead, you get an error. Afterwards, you attempt to ping the IP address for the ExamsDigest web server (87.2.5.99) successfully. Which of the following is MOST likely the cause of this issue?

- (A) The access points need replacement
- (B) The DHCP is not configured properly as it doesn't provide the IP address of the DNS server
- (C) Google Chrome needs an update
- (D) There is a rule on the firewall that is blocking you to connect to the web

Question 79. You just receive a call from your college that needs your help. He has reported that his workstation is running extremely slow. You perform a reboot of the workstation and you receive a S.M.A.R.T. error during the boot-up process. Which of the following actions should you perform as a next step?

- (A) Backup the hard drive from the workstation
- (B) Run CHKDSK /F
- (C) Run CHKDSK /R
- (D) Run diskpart

Question 80. What is the very first action you should take BEFORE you make any IMPORTANT changes to any computer you troubleshoot to test your theory?

- (A) Backup all of the important files
- (B) Turn off the workstation
- (C) Unplug all the cables from the workstation
- (D) Use Time Machine to restore deleted files

Question 81. Your manager's computer was hacked. After many hours of work, you identify all the affected files and successfully remove the malware from his system. What is the NEXT step you should perform according to the CompTIA troubleshooting methodology?

- (A) Establish a theory of probable cause
- (B) Establish a plan of action to resolve the problem and implement the solution
- (C) Document findings, actions, and outcomes
- (D) Verify full system functionality and, if applicable, implement preventive measures

Question 82. You see streaking, lines, and missed prints when you are printing documents using your office's laser printer. What action should you perform next to solve this problem?

- (A) Fill the printer with papers
- (B) Replace the toner cartridge
- (C) Replace the paper tray
- (D) Clean the toner cartridge

Question 83. You have been tasked to troubleshoot a computer that doesn't boot and when you are trying to boot, it smells a burning plastic. Which of the following tools should you use to diagnose the problem with this computer?

- (A) Multimeter
- (B) Crimper
- (C) Cable toner
- (D) Power supply tester

Question 84. You have been tasked to replace a cracked screen from your co-worker. The manufacturer's website doesn't provide any how-to guidance on how to replace cracked screens. Which of the following is the BEST action to take when replacing cracked screens with no documentation at hand?

- (A) Remove the laptop's cracked screen while keeping track of all of the screw locations, cables, and connectors
- (B) Find someone who has done this before
- (C) Send an email to the manufacturer's support team
- (D) Ask for a refund and take another screen from a different manufacture

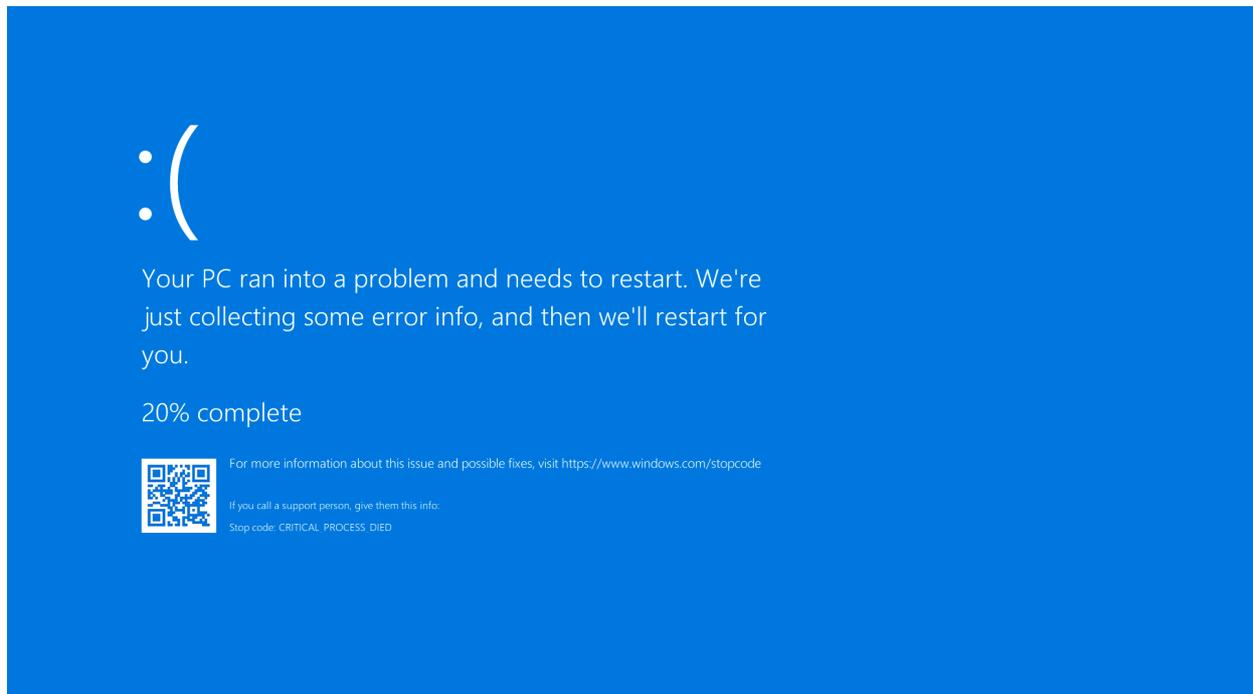
Question 85. When the touch screen of the laptop doesn't function properly what do you need to check first in order to troubleshoot the issue?

- (A) Check the firmware update
- (B) Check the power supply cable
- (C) Check the digitizer settings
- (D) Check the device manager

Question 86. Users complain that they can't reach the site www.examsdigest.com but they can reach other sites. You try to access the site and discover you can't connect either, but you can ping the site with its IP address. Which of the following is the most possible cause?

- (A) The DNS server is down
- (B) The site www.examsdigest.com is down
- (C) The router doesn't work
- (D) Users have wrong IP settings

Question 87. Your workstation just stops working and displays a BSOD (Blue screen of death) error on the screen like the image below. Which of the following is the most likely cause of this error?



- (A)** Corruption of the memory
- (B)** Network interface card failure
- (C)** Failure of the power supply
- (D)** The system is hacked

Question 88. The accounting department complaining they aren't able to connect to the internet. You connect your laptop to the accounting department's network and open the command prompt to type the command `ipconfig/all`. The command provides your IPv4 address which is 192.168.1.10, your subnet mask 255.255.255.0, and your default gateway 192.168.1.1. Next, you run the command `ping 145.3.5.87` but you don't get any successful reply back, you just get the message "Request timed out". Next, you ping one of the workstations on the same network by typing the command `ping 192.168.1.11` and you receive four successful replies. Which of the following is MOST likely the issue in the accounting department?

- (A) The DNS server is down
- (B) The router doesn't function properly
- (C) The DHCP server is misconfigured
- (D) The accounting department is in the wrong VLAN

Question 89. Your co-worker opened a trouble ticket stating his computer is experiencing slow performance when reading or writing to the hard drive. After a quick inspection, you realized that it is not a system performance issue, and the system is not overheating. Which of the following would be the BEST action to take in attempting to fix this problem?

- (A) Run the disk repair tool
- (B) Remove the unnecessary software
- (C) Disable the firewall
- (D) Clean the cooling fans of the system

Question 90. The product manager of your company is ready to pitch the new product to investors. You are setting up a projector and a laptop for use in the room. The image on the screen from the projector is flickering intermittently, but the image on the laptop's display is working as expected. After trying to change the resolution, you noticed that the flickering of the projector is still there. Which of the following actions should you perform next to troubleshoot the issue?

- (A) Make sure the cable is connected properly on the laptop and the projector
- (B) Update the drivers from the laptop
- (C) Connect the power cable on the laptop
- (D) Change the color settings on the laptop

Answers 71-90

Question 71. You have been hired to work as a network technician for 5 days at Amazon's event (AWS re:Inforce). One of the keynote speakers has submitted a trouble ticket stating that the projector connected to his workstation on the stage is not working properly. You look at the image being projected on the wall and notice it is dim, but the image appears to be displayed clearly and correctly. What should you do to resolve the issue as quickly as possible?

- (A) Replace the projector as it fails to operate properly
- (B) Increase the contrast on the projector**
- (C) Replace the keynote speaker's workstation
- (D) Update the drives on the workstation

Explanation 71. Increase the contrast on the projector is the correct answer. If the image being displayed is dim, this could be an issue with the contrast of your projector. By increasing the contrast, you can increase the amount of light reflected from an all-white image and an all-black image. The higher the contrast ratio, the brighter the whites will appear in the image.

Question 72. Your friend Mike claims that his computer keeps rebooting itself without any warning message. Which of the following is the BEST action you should take to investigate and troubleshoot this issue?

- (A) Replace the power supply from the workstation
- (B) Format the hard drive of the workstation
- (C) Check the power supply from the workstation**
- (D) Install a new operating system

Explanation 72. **Check the power supply from the workstation is the correct answer.** When a computer keeps rebooting itself means there is a symptom of a faulty power supply or the computer is overheating. If the power supply is faulty, the computer will reboot itself. Therefore, you should test the power supply first to determine if that is the root cause of the issue, and then replace the power supply, if required.

Question 73. Which of the following is the second step of the CompTIA troubleshooting methodology?

- (A) Identify the problem
- (B) Establish a theory of probable cause**
- (C) Test the theory to determine cause
- (D) Establish a plan of action to resolve the problem and implement the solution

Explanation 73. Establish a theory of probable cause is the correct answer. For the exams, you should be able to identify all the steps of the troubleshooting methodology.

1. Identify the problem

- Question the user and identify user changes to computer and perform backups before making changes
- Inquire regarding environmental or infrastructure changes
- Review system and application logs

2. Establish a theory of probable cause (question the obvious)

- If necessary, conduct external or internal research based on symptoms

3. Test the theory to determine cause

- Once the theory is confirmed, determine the next steps to resolve problem
- If theory is not confirmed re-establish new theory or escalate

4. Establish a plan of action to resolve the problem and implement the solution

5. Verify full system functionality and, if applicable, implement preventive measures

6. Document findings, actions, and outcomes

Question 74. Your co-worker Emilie just open a new trouble ticket for you, stating that she is not able to connect to the internet. After a quick investigation, you have noticed she receives an IP address of 169.254.2.2. What is most likely the cause of this issue?

- (A) DHCP failure**
- (B)** Emilie's workstation is hacked
- (C)** Malfunctioned NIC
- (D)** DNS failure

Explanation 74. DHCP failure is the correct answer. Automatic Private IP Addressing (APIPA) is a feature in operating systems (such as Windows) that enables computers to automatically self-configure an IP address and subnet mask when their DHCP server isn't reachable. The IP address range for APIPA is 169.254.0.1-169.254.255.254, with the subnet mask of 255.255.0.0.

Since Emilie's workstation assigned an IP address of 169.254.2.2 then you can identify that the issue is on the DHCP server.

When a DHCP client boots up, it looks for a DHCP server in order to obtain network parameters. If the client can't communicate with the DHCP server, it uses APIPA to configure itself with an IP address from the APIPA range. This way, the host will still be able to communicate with other hosts on the local network segment that are also configured for APIPA.

Question 75. You just received a new troubleshooting ticket from your co-worker Marie. She is trying to connect on the internet (wirelessly) but she receives an error message that says "There is an IP address conflict with another system on the network". Which of the following options will resolve the issue?

- (A) Change the network interface card from Marie's laptop
- (B) Change the way she receives the IP address from static to dynamic using DHCP**
- (C) Connect to the internet using Ethernet cable
- (D) Change the IP address manually

Explanation 75. **Change the way she receives the IP address from static to dynamic using DHCP is the correct answer.** This is a common error that occurs when two network devices are assigned the same IP address on a network. This is happening when static IP addresses are used, so the easiest way to avoid this issue is to use DHCP to assign the IP ad-

dresses on the network dynamically to avoid duplication.

Change the Network Interface Card from Marie's laptop is incorrect because this can't resolve the issue as far as the workstation gets a static IP address.

Connect to the internet using Ethernet cable is incorrect because it doesn't matter if you are connected wirelessly or not as far as the workstation gets a static IP address then she will always receive the error message.

Change the IP address manually is incorrect because if she changes the address manually then there is a chance to insert again duplicate address.

Question 76. Your co-worker tells you that he is having a problem accessing his email. What is the first step of the CompTIA troubleshooting methodology?

- (A) Gather information by asking questions**
- (B)** Establish a plan of action to resolve the problem
- (C)** Document the issue
- (D)** Establish a theory of probable cause

Explanation 76. Gather information by asking questions is the correct answer. The information you have at hand is not sufficient to come up with a solution. In this case, the first troubleshooting step would be to talk to your co-worker and gather more information about the problem.

Question 77. One of your customers has some network-related issues. You have been dispatched to your customer's office to troubleshoot their network connectivity. You have asked the customer what the issue is and he replied, "They can't connect to the internet". Then you ask a few follow-up questions to better understand the situation and ask if the browser throws an error message. Which of the following steps of the CompTIA troubleshooting methodology best describes the actions you are currently taking?

- (A) Identify the problem**
- (B) Establish a theory of probable cause**
- (C) Test the theory to determine the cause**
- (D) Document findings, actions, and outcomes**

Explanation 77. Identify the problem is the correct answer. Based on the given scenario it seems you are trying to gather more information by asking questions about the problem and its symptoms in order for you to identify the problem.

For the exams, you should be able to identify all the steps of the troubleshooting methodology.

1. Identify the problem

- Question the user and identify user changes to computer and perform backups before making changes
- Inquire regarding environmental or infrastructure changes
- Review system and application logs

2. Establish a theory of probable cause (question the obvious)

- If necessary, conduct external or internal research based on symptoms

3. Test the theory to determine cause

- Once the theory is confirmed, determine the next steps to resolve problem
- If theory is not confirmed re-establish new theory or escalate

4. Establish a plan of action to resolve the problem and implement the solution

5. Verify full system functionality and, if applicable, implement preventive measures

6. Document findings, actions, and outcomes

Question 78. You are setting up a new wireless network for the new department. You just finished the installation of the wireless access points and the configuration of the DHCP server. To test if everything works as expected you just turn the laptop on and connect to the network. Your laptop is automatically assigned an IP address of 192.168.1.2 from the DHCP server. On the terminal, you type the command `ping 192.168.1.1` to check if the default gateway responds, and sure enough, it works. You open Google Chrome and attempt to connect to `examsdigest.com`, but you cannot connect, instead, you get an error. Afterwards, you attempt to ping the IP address for the ExamsDigest web server (87.2.5.99) successfully. Which of the following is MOST likely the cause of this issue?

- (A) The access points need replacement
- (B) The DHCP is not configured properly as it doesn't provide the IP address of the DNS server**
- (C) Google Chrome needs an update
- (D) There is a rule on the firewall that is blocking you to connect to the web

Explanation 78. **The DHCP is not configured properly as it doesn't provide the IP address of the DNS server is the correct answer.** Since you are able to ping the IP of the examsdigest.com but you can't visit the site by its domain name then the issue is DNS-related. So, the DHCP isn't configured properly.

Question 79. You just receive a call from your college that needs your help. He has reported that his workstation is running extremely slow. You perform a reboot of the workstation and you receive a S.M.A.R.T. error during the boot-up process. Which of the following actions should you perform as a next step?

- (A) Backup the hard drive from the workstation**
- (B)** Run CHKDSK /F
- (C)** Run CHKDSK /R
- (D)** Run diskpart

Explanation 79. **Backup the hard drive from the workstation is the correct answer.** S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology; often written as SMART) is a monitoring system included in computer hard disk drives (HDDs), solid-state drives (SSDs), and eMMC drives. Its primary function is to detect and report various indicators of drive reliability with the intent of anticipating imminent hardware fail-

ures. When S.M.A.R.T. data indicates a possible imminent drive failure, software running on the host system may notify the user so preventive action can be taken to prevent data loss, and the failing drive can be replaced and data integrity maintained.

Run CHKDSK /F is incorrect. CHKDSK /F scans and attempts to repair errors in the file system overhead information stored on a disk.

Run CHKDSK /R is incorrect. CHKDSK /R includes /F, but also scans the entire disk surface for physical errors and attempts to repair them as well. Repairs are often successful, but not guaranteed.

Run diskpart is incorrect. The diskpart command interpreter helps you manage your computer's drives (disks, partitions, volumes, or virtual hard disks).

Question 80. What is the very first action you should take BEFORE you make any IMPORTANT changes to any computer you troubleshoot to test your theory?

- (A) Backup all of the important files**
- (B)** Turn off the workstation
- (C)** Unplug all the cables from the workstation
- (D)** Use Time Machine to restore deleted files

Explanation 80. Backup all of the important files is the correct answer. Common sense is not always a common practice. You should always ensure that you have a backup of all of your or your client's important and critical files prior to making any changes. If you break a hardware component then this can be replaced easily, but your files or even your client's files may be irreplaceable.

Question 81. Your manager's computer was hacked. After many hours of work, you identify all the affected files and successfully remove the malware from his system. What is the NEXT step you should perform according to the CompTIA troubleshooting methodology?

- (A) Establish a theory of probable cause
- (B) Establish a plan of action to resolve the problem and implement the solution
- (C) Document findings, actions, and outcomes**
- (D) Verify full system functionality and, if applicable, implement preventive measures

Explanation 81. Document findings, actions, and outcomes is the correct answer. Based on the given scenario you finished performing the step 5 (Verify full system functionality), and now you need to document the findings, actions, and outcomes.

For the exams, you should be able to identify all the steps of the troubleshooting methodology.

1. Identify the problem

- Question the user and identify user changes to computer and perform backups before making changes
- Inquire regarding environmental or infrastructure changes
- Review system and application logs

2. Establish a theory of probable cause (question the obvious)

- If necessary, conduct external or internal research based on symptoms

3. Test the theory to determine cause

- Once the theory is confirmed, determine the next steps to resolve problem
- If theory is not confirmed re-establish new theory or escalate

4. Establish a plan of action to resolve the problem and implement the solution

5. Verify full system functionality and, if applicable, implement preventive measures

6. Document findings, actions, and outcomes

Question 82. You see streaking, lines, and missed prints when you are printing documents using your office's laser printer. What action should you perform next to solve this problem?

- (A) Fill the printer with papers
- (B) Replace the toner cartridge**
- (C) Replace the paper tray
- (D) Clean the toner cartridge

Explanation 82. **Replace the toner cartridge is the correct answer.** The most obvious sign of a low toner cartridge is poor print quality. Streaking, lines or missed prints are all possible signs that cartridge replacement is imminent. If you have tried rocking the toner cartridge and are still getting poor prints, it is likely time to replace your cartridge.

Question 83. You have been tasked to troubleshoot a computer that doesn't boot and when you are trying to boot, it smells a burning plastic. Which of the following tools should you use to diagnose the problem with this computer?

- (A) Multimeter
- (B) Crimper
- (C) Cable toner
- (D) Power supply tester**

Explanation 83. Power supply tester is the correct

answer. You can easily identify from the burning plastic smell and the computer doesn't turn on that this issue is power supply related. If your laptop smells like something is burning, this usually means that your computer is overheating. This can be caused by a fan not working properly.

A power supply tester is an electronic device used to test how well a computer power supply is functioning. This type of testing is often performed as part of maintenance on a computer and can be used to try to determine the source of a computer problem.



Multimeter is incorrect. A multimeter is a measurement tool absolutely necessary in electronics. It combines three essential features: a voltmeter, ohmmeter, and ammeter, and in some cases continuity.



A multimeter allows you to understand what is going on in your circuits. Whenever something in your circuit isn't working, the multimeter will help you troubleshooting. Here are some situations in electronics projects that you'll find the multimeter useful:

1. is the switch on?
2. is this wire conducting the electricity or is it broken?
3. how much current is flowing through this led?
4. how much power do you have left on your batteries?

Crimper is incorrect. A crimping tool is a device used to conjoin two pieces of metal by deforming one or both of them to hold each other. The result of the tool's work is called a crimp. An example of crimping is affixing a connector to the end of a cable. For instance, network cables and phone cables are created using a crimping tool to join RJ-45 and RJ-11 connectors to both ends of phone or Cat 5 cable.



Cable toner is incorrect. A cable toner is an electronic device used to verify the electrical connections in a signal cable or other wired assembly. Basic cable testers are continuity testers that verify the existence of a conductive path between ends of

the cable, and verify the correct wiring of connectors on the cable.



Question 84. You have been tasked to replace a cracked screen from your co-worker. The manufacturer's website doesn't provide any how-to guidance on how to replace cracked screens. Which of the following is the BEST action to take when replacing cracked screens with no documentation at hand?

- (A) Remove the laptop's cracked screen while keeping track of all of the screw locations, cables, and connectors**
- (B) Find someone who has done this before**
- (C) Send an email to the manufacturer's support team**

(D) Ask for a refund and take another screen from a different manufacture

Explanation 84. Remove the laptop's cracked screen while keeping track of all of the screw locations, cables, and connectors is the correct answer. If you are not provided with the instructions for how to replace a cracked screen for a particular model, you can then disassemble the laptop and document all of the screw locations, cables, and connectors. This will then allow you to replace the cracked screen and reconnect all the cables properly.

Question 85. When the touch screen of the laptop doesn't function properly what do you need to check first in order to troubleshoot the issue?

- (A)** Check the firmware update
- (B)** Check the power supply cable
- (C) Check the digitizer settings**
- (D)** Check the device manager

Explanation 85. Check the digitizer settings is the correct answer. In touchscreen devices, the digitizer is a layer of glass

that's designed to convert analog touch comments into digital signals.

Both capacitive and resistive touchscreen devices have a digitizer. It's essentially a glass layer that's placed over the device's liquid-crystal display (LCD) layer.

Most laptops have a digitizer and an LCD screen if they are a touch screen device. If the touch screen is not working, but the display doesn't look cracked or broken, this is often a sign that the digitizer settings are incorrect or the digitizer is defective.

Question 86. Users complain that they can't reach the site www.examsdigest.com but they can reach other sites. You try to access the site and discover you can't connect either, but you can ping the site with its IP address. Which of the following is the most possible cause?

- (A) The DNS server is down**
- (B)** The site www.examsdigest.com is down
- (C)** The router doesn't work
- (D)** Users have wrong IP settings

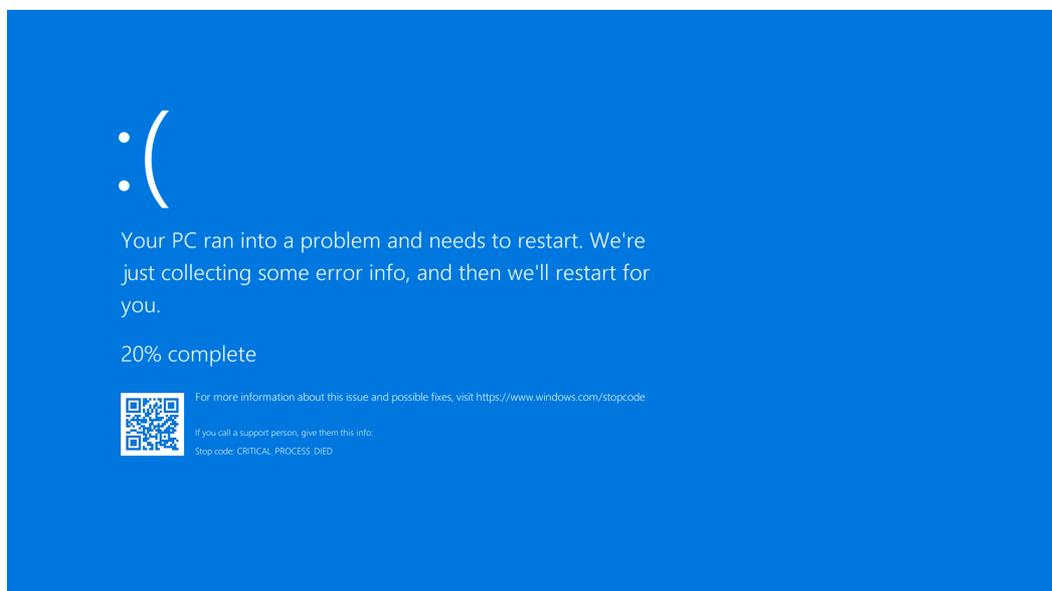
Explanation 86. **The DNS server is down is the correct answer.** The above scenario describes a DNS issue because you

can ping the site with its IP address but you aren't able to reach the site by its name.

The site www.examsdigest.com is down is incorrect because you can ping the site and get a response.

The router doesn't work and users have wrong IP settings are incorrect because users can access other sites.

Question 87. Your workstation just stops working and displays a BSOD (Blue screen of death) error on the screen like the image below. Which of the following is the most likely cause of this error?



- (A) Corruption of the memory**
- (B) Network interface card failure**
- (C) Failure of the power supply**
- (D) The system is hacked**

Explanation 87. Corruption of the memory is the correct answer. A stop error or exception error commonly called the blue screen of death (BSOD) or blue screen, is an error screen displayed on Windows computers following a fatal system error. It indicates a system crash, in which the operating system has reached a condition where it can no longer operate safely. This is caused by many different problems, such as a corruption of memory or a crucial process terminating unexpectedly.

The rest options are incorrect. None of these issues can display a BSOD message on the screen.

Question 88. The accounting department complaining they aren't able to connect to the internet. You connect your laptop to the accounting department's network and open the command prompt to type the command `ipconfig/all`. The command provides your IPv4 address which is 192.168.1.10, your subnet mask 255.255.255.0, and your default gateway 192.168.1.1. Next, you run the command `ping 145.3.5.87` but you don't get any successful reply back, you just get the message "Request timed out". Next, you ping one of the workstations on the same network by typing the command `ping 192.168.1.11` and you receive four successful replies. Which of the following is MOST likely the issue in the accounting department?

- (A) The DNS server is down
- (B) The router doesn't function properly**
- (C) The DHCP server is misconfigured
- (D) The accounting department is in the wrong VLAN

Explanation 88. **The router doesn't function properly is the correct answer.** Since you can ping other workstations within the accounting department, but you cannot successfully ping workstations outside from your network, this indicates that the router is not functioning properly. If the router is not functioning, the workstations will be unable to access any devices or

servers outside of the accounting department.

The rest options are incorrect as the "Request timed out" error message indicates that you can't reach workstations outside of your network.

Question 89. Your co-worker opened a trouble ticket stating his computer is experiencing slow performance when reading or writing to the hard drive. After a quick inspection, you realized that it is not a system performance issue, and the system is not overheating. Which of the following would be the BEST action to take in attempting to fix this problem?

- (A) Run the disk repair tool**
- (B) Remove the unnecessary software
- (C) Disable the firewall
- (D) Clean the cooling fans of the system

Explanation 89. **Run the disk repair tool is the correct answer.** To check and repair file system error that causes hard disk drive corruption, you can run the disk repair tool. Slow performance can be a symptom of overheating but we eliminated overheating as the cause. The issue is most likely caused by a file system problem. To fix this type of problem, you should try running the disk repair tool or run the Disk Defragmenter tool to optimize the file system and read/write performance.

The rest options are incorrect because none of these actions can increase/improve the performance when reading or writing to the hard drive.

Question 90. The product manager of your company is ready to pitch the new product to investors. You are setting up a projector and a laptop for use in the room. The image on the screen from the projector is flickering intermittently, but the image on the laptop's display is working as expected. After trying to change the resolution, you noticed that the flickering of the projector is still there. Which of the following actions should you perform next to troubleshoot the issue?

- (A) Make sure the cable is connected properly on the laptop and the projector**
- (B) Update the drivers from the laptop
- (C) Connect the power cable on the laptop
- (D) Change the color settings on the laptop

Explanation 90. **Make sure the cable is connected properly on the laptop and the projector is the correct answer.** A flickering image on a projector is an indicator that the cable between the laptop and the projector is not connected properly. This is especially common with older style display cables like VGA and DVI. Therefore, it is important to ensure a VGA cable is properly secured using the thumbscrews on the cable.

THE END

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