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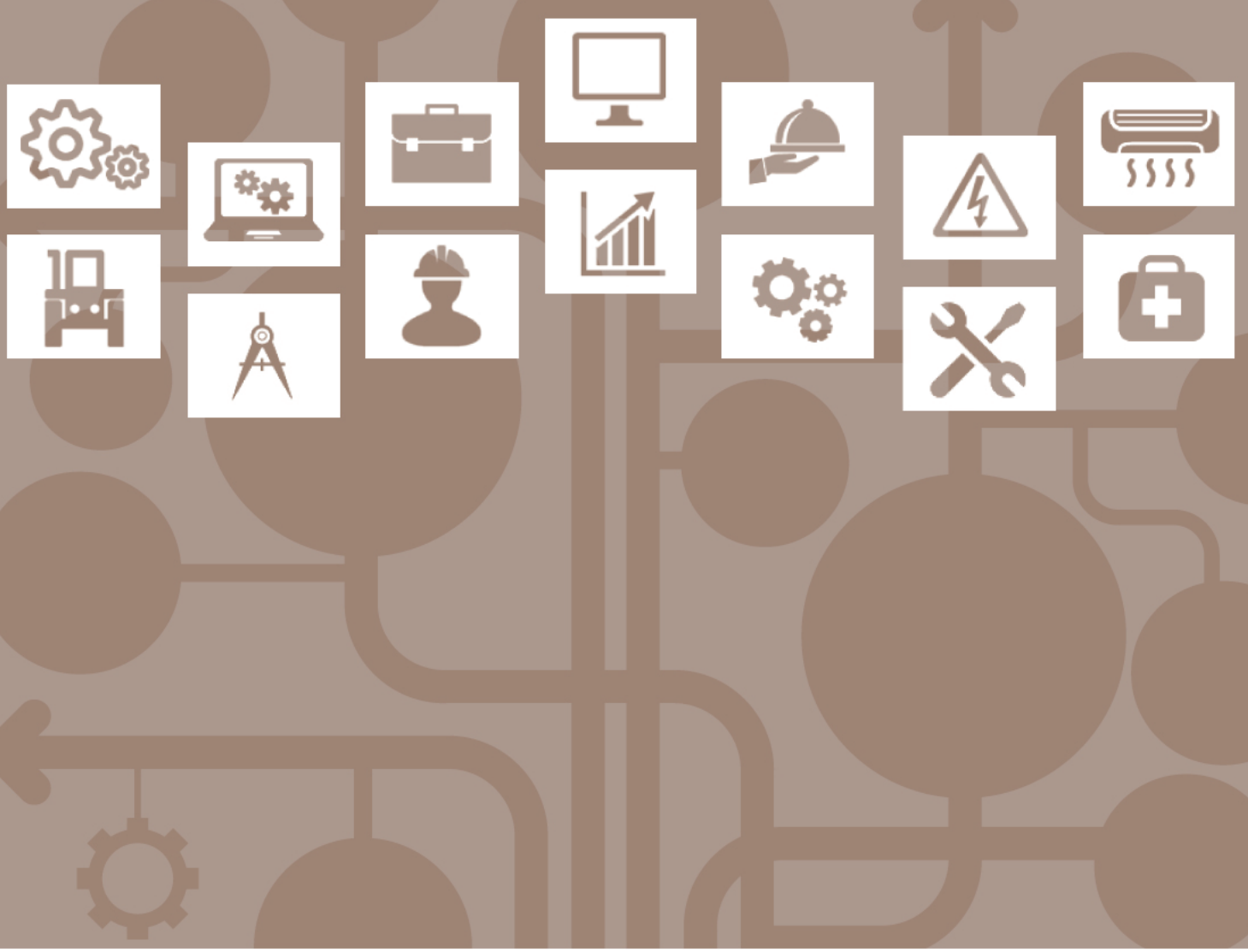
Entry Level Assessment Blueprint

Computer Repair Technology



Test Code: 4515 / Version: 01

Specific Standards and Competencies Included in this Assessment:

Safety

- Identify and implement proper personal and equipment safety procedures, including those involving ESD events
- Identify proper disposal and recycling procedures (PC components)
- Identify industry standards and federal regulations
- Recognize proper body mechanics and ergonomic principles

Installing, Configuring, and Upgrading

- Install, configure, optimize, and upgrade system board, power supplies, and cooling systems
- Differentiate characteristics of various processor and memory types
- Identify and configure CMOS setup and BIOS
- Identify functionality, install, and configure storage device options
- Identify and describe characteristics of various peripherals and ports used
- Display knowledge of different operating systems and licensing requirements

Diagnosing and Troubleshooting

- Diagnose and identify processor and memory faults
- Demonstrate ability to isolate and resolve power supply and battery failures on the system board
- Display ability to identify and resolve storage device issues
- Identify uses of troubleshooting utilities
- Troubleshoot and resolve expansion card issues (drivers)
- Demonstrate ability to set up and troubleshoot external display
- Identify tools, diagnostic procedures, and troubleshooting techniques for operating system recovery and upgrade
- Demonstrate ability to isolate and resolve peripheral connectivity failures
- Utilize command line techniques for diagnosing and troubleshooting
- Demonstrate the proper use of multimeters and other test equipment
- Identify basic electrical, transmission, and storage units of measurement

Specific Standards and Competencies continued:

Preventive Maintenance

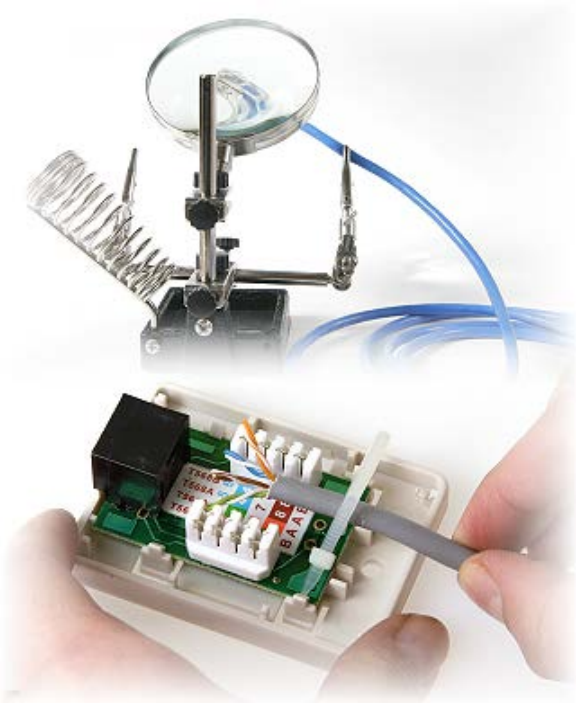
- Differentiate between an electrical line conditioner, uninterruptible power supply (UPS), and surge protector
- Select and perform proper file backup procedures
- Identify the use of system monitoring and various system utilities
- Install and maintain current software patches, service packs, and upgrades
- Maintain current antivirus, spyware, and/or malware software
- Clean and maintain physical computer components according to industry standards

System Boards, Storage, Processors, and Memory

- Identify processor compatibility, architecture, and upgrade issues
- Identify and differentiate memory characteristics and upgrade issues
- Identify and differentiate system board characteristics and upgrade issues
- Install and troubleshoot RAID 0, 1, 5
- Differentiate the characteristics and components of mobile devices (e.g., note books, tablets, laptops)

Input-Output (I/O) Devices

- Identify uses of various input devices (i.e., digital camera, scanner, biometric devices, keyboard, mouse)
- Identify various I/O connectivity methods (i.e., HDMI, USB, wireless, Bluetooth)



Specific Standards and Competencies continued:

Printing

- Identify and differentiate various printers and printer processes (i.e., inkjet, laser, impact and non-impact)
- Identify various printer connectivity methodologies (i.e., local, network)
- Install and troubleshoot printers

Basic Networking

- Install, configure, and troubleshoot Network Interface Cards (NICs)
- Install, configure, and troubleshoot wired and wireless network connections
- Identify various network topologies (i.e., star, ring, mesh, bus)
- Identify various network access methods
- Differentiate between a client/server and a peer-to-peer network
- Convert units between binary, decimal, and hexadecimal
- Identify the seven layers of the OSI model
- Explain the properties and characteristics of the TCP/IP model
- Install and troubleshoot email

Security

- Identify and implement physical security (e.g., locked areas, biometric devices, cameras)
- Identify and implement digital security (e.g., firewalls, antivirus, spyware, malware, password implementation)

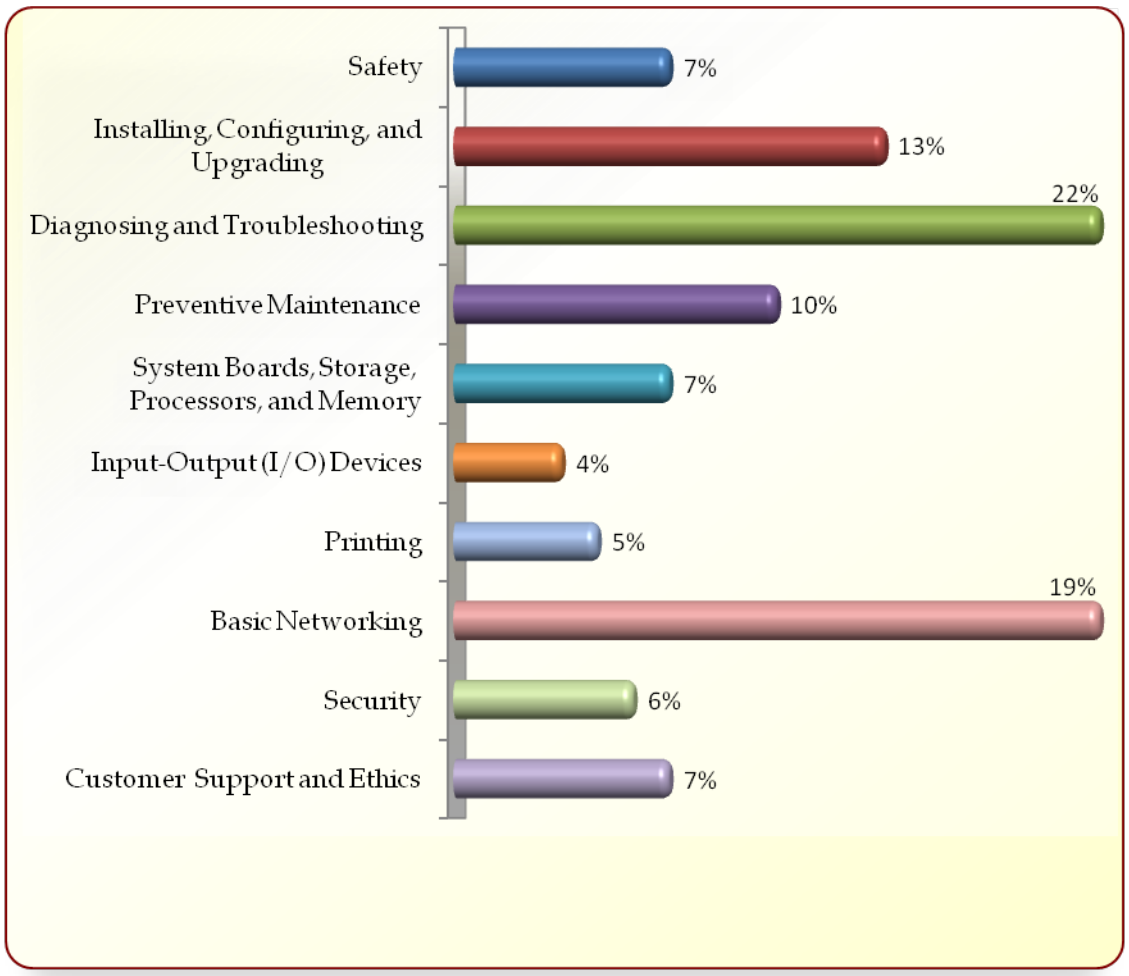
Customer Support and Ethics

- Practice professional behavior, including communication and customer service skills
- Practice ethical use of software and hardware (i.e., copyright laws, hacking, peer-to-peer downloading)
- Demonstrate an awareness of emerging technologies

Written Assessment:

Administration Time: 3 hours
Number of Questions: 193

Areas Covered:



Sample Questions:

A wrist grounding strap should be worn to protect a
- A. CRT monitor
- B. power supply
- C. system board
- D. laser printer

One form of non-volatile memory is
- A. ROM
- B. DDR2
- C. SDRAM
- D. cache

A power supply is considered a/an
- A. FRU
- B. CRU
- C. consumable
- D. expendable

The term, malware, refers to software designed to
- A. enhance the appearance of a web browser
- B. covertly infiltrate or damage a computer system
- C. convert text files to binary files
- D. analyze and test for damage on the hard drive platters

System devices signal the CPU with
- A. an I/O address
- B. polling
- C. an IRQ
- D. a DMA

The _____ printer is commonly used in retail applications for printing receipts on heat-sensitive paper.
- A. laser
- B. thermal
- C. inkjet
- D. dye-sublimation

Public locations where wireless Internet access is available are called
- A. hubs
- B. WAN
- C. LAN
- D. hot spots

Sample Questions continued:

To ensure the NIC is operating correctly, check with

A. MSCONFIG
B. network activity LED
C. NETSTAT
D. multimeter

A good example of physical security is

A. installing a software firewall
B. installing webcams with motion-detection and surveillance software
C. changing the administrative password on a regular basis
D. installing antivirus software on each computer

The buyer of a single-licensed software can legally

A. install on a network server
B. install it on several computers
C. modify the programs within
D. make one copy for backup

Performance Assessment:

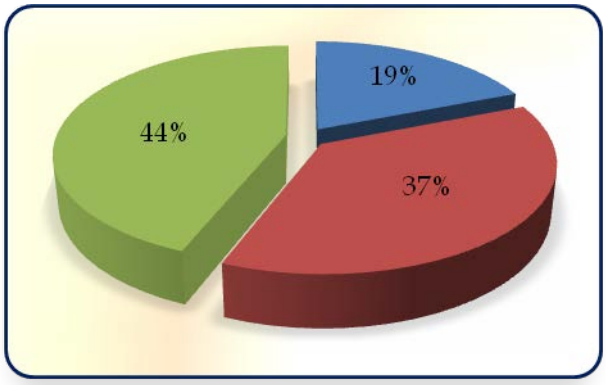
Administration Time: 1 hour and 55 minutes
Number of Jobs: 3

Areas Covered:

19% **Device Identification**
Participant will be required to identify the features of a computer and record the name next to the correct letter.

37% **Installing New Hardware/Troubleshooting**
Participant will use the correct tools and safety procedures to diagnose a computer and document the symptoms. Steps will include; installing provided NIC into the computer on the correct driver from the provided media.

44% **Network Connectivity**
Participant will configure NIC to automatically obtain an IP address for a network device using a command line interface. Steps will include; verify connectivity, install crossover cables, join the workgroup, ping the IP address, connect to machine, and transfer file.



Sample Job: Device Identification

Maximum Time: 25 minutes

Participant Activity: The participant will identify each feature of the computer and record the name next to the correct letter.