NOCTI

Teacher Credential Blueprint

Computer Repair Technology

Code: 5282 / Version: 01

General Assessment Information

Blueprint Contents

Test Type: The Computer Repair Technology assessment is included in NOCTI's Teacher assessment battery. Teacher assessments measure an individual's technical knowledge and skills in a proctored proficiency examination format. These assessments are used in a large number of states as part of the teacher licensing and/or certification process, assessing competency in all aspects of a particular industry. NOCTI Teacher tests typically offer both a written and performance component that must be administered at a NOCTI-approved Area Test Center. Teacher assessments can be delivered in an online or paper/pencil format.

Revision Team: The assessment content is based on input from subject matter experts representing the following states: Florida, Idaho, Missouri, New York, North Dakota, Pennsylvania, and Texas.

CIP Code

47.0104- Computer Installation and Repair Technology/Technician

Learning that works for America CTE™

Career Cluster
Information Technology

O*net™ in*it

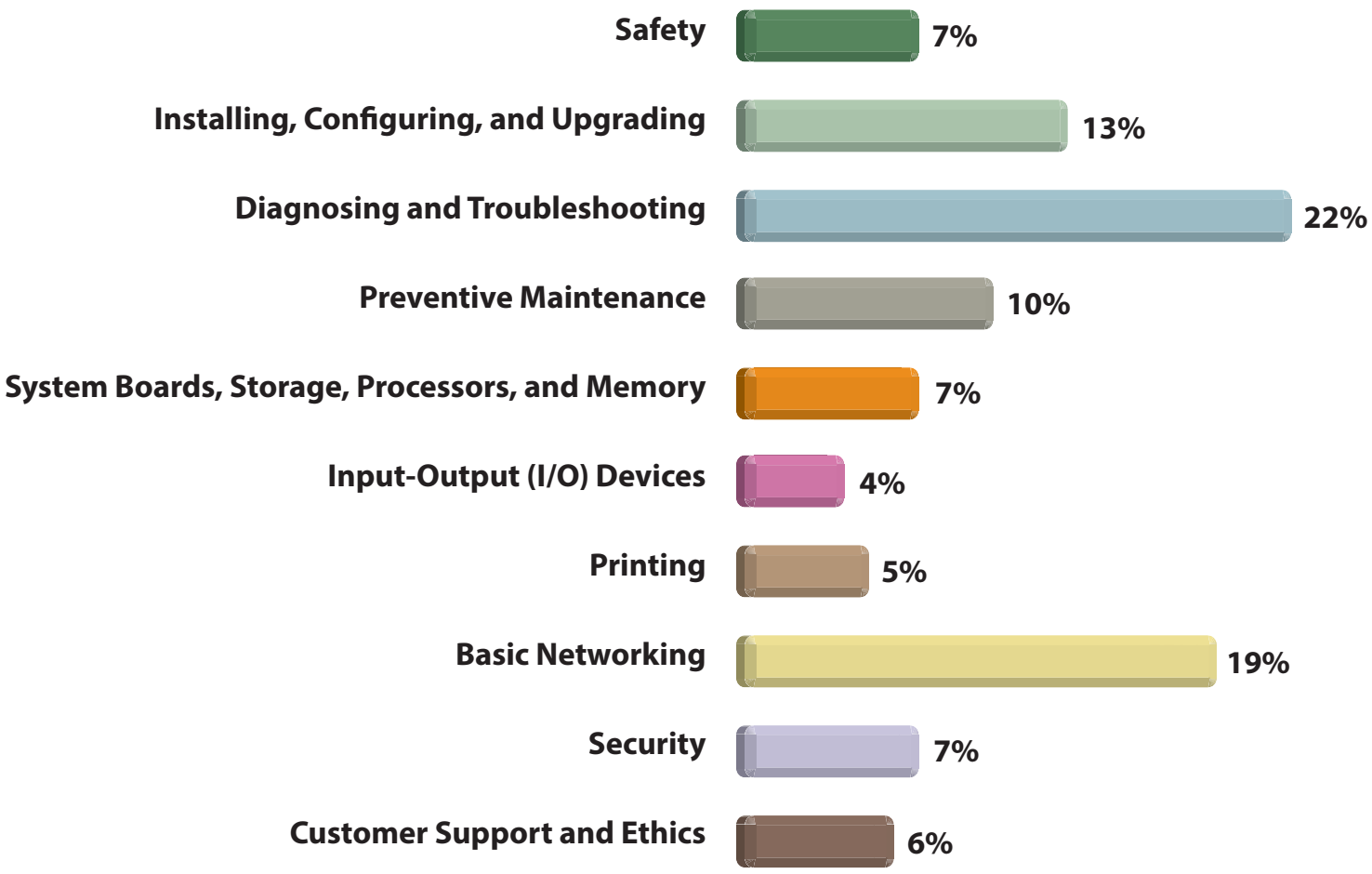
15-1151.00- Computer User Support Specialists

Written Assessment

NOCTI written assessments consist of questions to measure an individual's factual theoretical knowledge.

Administration Time: 3 hours
Number of Questions: 188
Number of Sessions: This assessment may be administered in one, two, or three sessions.

Areas Covered



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

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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

Input-Output (I/O) Devices

- Identify uses of various input devices
- Identify various I/O connectivity methods

Printing

- Identify and differentiate various printers and printer processes
- Identify various printer connectivity methodologies
- Install and troubleshoot printers

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Specific Standards and Competencies (continued)

Basic Networking

- Install, configure, and troubleshoot Network Interface Cards (NICs)
- Install, configure, and troubleshoot wired and wireless network connections
- Identify various network topologies
- 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
- Identify and implement digital security

Customer Support and Ethics

- Practice professional behavior, including communication and customer service skills
- Practice ethical use of software and hardware
- Demonstrate an awareness of emerging technologies

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

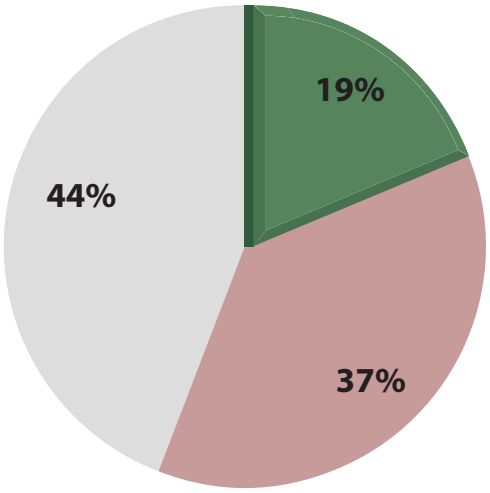
In the OSI model, what layer performs routing functions?

A. data link
B. network
C. session
D. transport

Performance Assessment

NOCTI performance assessments allow individuals to demonstrate their acquired skills by completing actual jobs using the tools, materials, machines, and equipment related to the technical area.

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.