NOCTI ®

CUSTOMIZED TEACHER ASSESSMENT BLUEPRINT

COMPUTER TECHNOLOGY/COMPUTER SYSTEMS

Test Code: 5999
Version: 01

Specific competencies and skills tested in this assessment:

Personal and Environmental Safety
Review safety data sheets (SDS) and explain their requirements in handling hazardous materials
Describe types of fire extinguishers and explain which types to use for extinguishing various fires
Demonstrate safe procedures to follow when lifting and carrying heavy objects
Identify potential hazards when working with power supplies
Identify proper disposal procedures for batteries and display devices
Configure a computer's power management settings to maximize energy efficiency
Maintain a safe work area to avoid common accidents and injuries

Computing Fundamentals
Identify the various types of computers people use in the modern world
Identify appropriate computer equipment and peripherals for given a specific situation and budget
Describe the interaction between software and hardware
Identify the functions of an operating system
Describe the various components of a graphical user interface based operating system

Productivity Software
List and describe several common application software suites
Demonstrate the ability to print documents using applications software

Internet Applications
Describe appropriate email etiquette
Describe common ethical issues with downloading legal and illegal documents software
Demonstrate how to use a web browser to effectively search the Internet and retrieve specified information
Describe common uses of cloud computing for work, school, and home

Computer Hardware
Describe and categorize storage devices and backup media
Explain the operation of a motherboard and its components, types, and features
Explain the purpose and characteristics of CPUs and their functions
Explain cooling methods and devices
Compare and contrast memory types, characteristics, and their purpose
Explain the characteristics of various monitors, and display devices
Explain the function and types of adapter cards
Explain the purpose of CPU and case fans air flow directions

Troubleshooting, Repair, and Maintenance
Describe and explain troubleshooting theory
Describe, explain, and interpret common hardware and operating system symptoms and their causes
Describe and determine the troubleshooting methods and tools for printers
Describe and interpret common laptop issues and determine appropriate basic troubleshooting method
Describe and apply common preventative maintenance techniques for computers

Operating Systems and Software
Compare and contrast the different operating systems and their features
Given a scenario, demonstrate proper use of user interfaces
Explain the process and steps to install and configure an operating system
Explain the basics of boot sequences, methods, and startup utilities
Select appropriate commands and options to troubleshoot and resolve problems
Explain the difference between various operating system directory structures
Identify and use system utilities/tools and evaluate the results
Evaluate and resolve common OS (Operating System) and software issues

Networking
Describe common types of computer networks based on their scope of coverage
Describe how computer networks, telephone networks, and the Internet are related
Define networking fundamentals, technologies, devices, and protocols
Describe, fabricate, and test network cables and connectors
Compare and contrast various types of wired and wireless networks
Demonstrate how to use the appropriate tools to troubleshoot problems of network connectivity

Security
Explain the ethical, legal, and security issues related to handling data
Identify security features including wireless encryption, and malicious software protection
Identify security, password management, locking workstations, and biometrics
Troubleshoot, remove, and prevent viruses and malware
Implement security and troubleshoot common issues
Describe ethical, security, and privacy issues involved in posting personal information

Customer Service
Demonstrate the use of effective communication with customers
Utilize the team approach to deliver customer service

Written Assessment:

Administration Time: 3 hours
Number of Questions: 195

Areas covered:

10%	Personal and Environmental Safety
7%	Computer Fundamentals
3%	Productivity Software
5%	Internet Applications
16%	Computer Hardware
16%	Troubleshooting, Repair, and Maintenance
17%	Operating Systems and Software
13%	Networking
10%	Security
3%	Customer Service

Sample Questions:

What class of fire extinguisher should be used in an electrical or computer fire?
     A.   Class A
     B.   Class B
     C.   Class C
     D.   Class D

A device that continually protects a PC against electrical spikes and provides backup power is a/an
     A.   UPS
     B.   AC97
     C.   SPS
     D.   DSP

A/An _____ storage device uses a laser beam to read and write data.
     A.   optical
     B.   solid state
     C.   external
     D.   magnetic

A critical component to effective teamwork is
     A.   arrogance
     B.   mirroring
     C.   role playing
     D.   preparation

Peer-to-peer networks
      A.   do not share resources
      B.   allow workstations to share and access resources without a dedicated server
      C.   are optimized for sharing resources from a single computer with many users
      D.   are remotely administered

What software is required to access .pdf files?
      A.   Real Player
      B.   Direct X
      C.   Acrobat Reader
      D.   Internet Explorer

The use of all caps in an email message is commonly understood as
      A.   laziness
      B.   important
      C.   shouting
      D.   humorous

The final step a technician takes when troubleshooting a user's problem is
      A.   test theories
      B.   document the solution
      C.   develop an action plan
      D.   gather information

Which of the following operating systems is considered open source?
      A.   Windows® 7
      B.   OS X
      C.   LINUX
      D.   UNIX

A computer designed to handle client print jobs in the most efficient manner is a
      A.   PC shared printer
      B.   client access printer
      C.   dedicated print server
      D.   network plan

Performance Assessment:

Administration Time: 2 hours and 35 minutes
Number of Jobs: 4

Areas Covered:

 19%   **Components and Tools Identification**
              Participants will identify a variety of computer components and tools and record the name of each item.

 19%   **Assemble a Network Cable**
              Participants will use proper safety procedures to select materials and construct a straight-through patch cable according to industry standards.

 39%   **Troubleshooting and Software Installation**
              Participants will diagnose and repair a computer that will not boot to a new hard drive. Steps will include creating a limited user account with password, verifying the network card is properly installed, and installing a virus protection software package.

 23%   **Using Productivity Software**
              Participants will use a word processing application to prepare a computer repair document. Steps will include using font, margins, and clipart files as shown in the example provided.

Sample Job: Components and Tools Identification

Maximum Job Time: 25 minutes

Participant Activity: Participants will identify each feature or component of the computer and record the name next to the correct letter. Participants will complete the same process identifying computer tools.