Information Systems Support 1-2—Standards

1.1 Identify basic IT vocabulary

- Processor speed/cores
  - Single/Dual/Quad core
  - Intel based / Cell based/AMD based
  - GHz vs. MHz
  - Processor cache size
  - Bus speed (as they relate to motherboards, memory, etc)
- RAM
  - DDR, DDR2, DDR3
  - DIMMS vs. SODIMMS
- Hard drives
  - RPMs
  - Cache size
  - Flash based vs. traditional hard drives
  - SATA, SCSI, IDE
  - Internal vs. external
  - Local vs. network shares
- Networking
  - Wireless networking terms
- Other common terms:

802.11a/b/g/n	Customization (text sizes, text styles, etc)	HTTP vs. HTTPS	SSID
ActiveX and Java	DHCP	IMAP	SSL
Antiphishing	DNS	Interference	Standard vs. crossover cables
Autonegotiating	DSL and cable modems	Internet	TCP/IP (IPv4 address, IPv6 address)
Bluetooth	Ethernet technologies features	Internet Cache	WAP (Wireless Access Point)
Broadband router	FTP	Plugins	Wireless router
Browser features	Home plug (Ethernet /Power)	POP3	
CAT5 (connections and cables)		Protocols	
Cookies		RF (Radio Frequency)	
		SMTP	

1.2 Demonstrate the proper use of the following devices:

Adjust monitor settings (brightness, contrast, etc)	Laptop	PDA	Server
Desktop	Monitors	Portable	Smartphone
			Netbook

1.3 Explain the characteristics and functions of internal and external storage devices

BluRay/CD/CDRW Disk Drive	DVD/DVDRW Hard drives	Multicard reader/writer	Mobile media devices
		USB storage	

1.4 Explain the characteristics and functions of peripheral devices

- Digital camera
- Web camera
- Speaker
- Tuner
- Microphone
- Printer / scanner

1.5 Explain the characteristics and functions of core input devices

- Keyboard
- Mouse
- Tablet (touch screen)
- Numeric keypad
- Gamepad

1.6 Identify the risks associated with upgrading the following technologies and equipment

- Operating systems (open source and commercial)
  - Compatibility issues
  - Upgrade issues
  - Data loss
- PC Speed/storage capability
  - Compatibility issues
  - Upgrade issues
  - Bus differences
  - Hardware failure
- Application
  - Minimum requirements
  - Compatibility issues
- Bandwidth and contention
  - VoIP
  - Streaming
  - Web delivered services
- Automatic application and operating system updates
  - Risks of automatic updates
  - Risks of not using automatic updates
  - Risks of not using manufacturer websites

1.7 Demonstrate the ability to set up a basic PC workstation

- Identify differences between connector types
  - DVI, VGA, HDMI, USB, PS/2, FireWire, Bluetooth, Wireless, Serial, Network connectors
- PCMCIA
- ExpressCard
- 3.5mm audio jack

- Power connectors
- Monitor types
- Computer (desktop, tower, laptop, custom cases)
- Keyboard (keyboard layout: regionalization)
- Mouse (touchpad, optical, trackball)
- Printer (USB, wireless, networked)
- Voltage and power requirements
- Turn on and use the PC and peripherals

2.0 Compatibility Issues and Common Errors

2.1 Identify basic compatibility issues between

- Processor performance
- RAM memory
- USB (1.1, 2.0)
- FireWire
- PS/2
- Ethernet
- Wireless networks

2.2 Recognize common operational problems caused by hardware

- Critical error message or crash
- System lockup (freeze)
- Application will not start or load
- Cannot logon to network
- Driver / hardware compatibility
- Input device will not function

2.3 Demonstrate the ability to minimize risks

- Data loss
- Loss of service
- Damage to equipment

3.0 Software Installation and Functions

3.1 Conduct basic software installation, removal and/or upgrading

- Follow basic installation/upgrade procedures
    - Check PC meets minimum requirements
    - Administrative Rights
    - Firewall access (unblocking ports for proper functionality)
- Configure the Operating System
    - Adjust basic settings (e.g. volume, date, time, time zone)
    - User accounts
    - Power settings (power save, sleep mode, etc)
    - Screen resolutions

- Documentation
- Licensing (Commercial, Freeware, Shareware)
- Software registration
    - Digital Rights Management
    - Software removal (clean uninstallation)
    - Reinstallation
- (clean installation)

3.2 Identify issues related to folder and file management

- Create, delete, rename and move folders
- Assign folder structure during installation
- Create, delete, rename, move and print files
- Importance of following backup
- Guidelines and procedures

3.3 Explain the function and purpose of software tools

- Performance and error correction tools
- Activity or event logging
- Backup tools
- Disk cleanup tools
- File compression tools

4.0 Security

4.1 Recognize basic security risks and procedures to prevent them

- Identify Risks
    - Social Engineering
    - Viruses
    - Worms
    - Trojan Horses
    - Phishing
    - Spyware
    - Adware
    - Malware
    - Identity Fraud
    - File and folder sharing
    - Web browser risks
    - Operating System vulnerability
    - Service packs
    - Security updates
    - Theft
    - Open or free networks
- Identify prevention methods
    - User awareness/education
    - Antivirus software

        - Ensure proper security certificate are used (SSL)
        - Wireless encryption (WPA/WEP)
        - Antispyware
        - File encryption
        - Firewalls
        - Antispamsoftware
        - Password best practice
        - Complexity (password construction)
        - Password confidentiality
        - Change frequency
        - Reuse
        - Utilization
    - Identify access control methods
        - Passwords and User ID
        - Screensavers
        - Physical security of hardware
        - Locks
        - Parental controls
        - Smart card
        - Fingerprint reader
        - One time password
    - Identify security threats related to the following:
        - Media used for backup (theft or loss)
        - Screen visibility (shoulder surfing)
        - Cookies (can be stolen, stores passwords, browser tracking)
        - Popups (automatic installations, click on links to malware)
        - Accidental misconfiguration

4.2 Recognize security breaches and ways to resolve them

- Recognize the proper diagnostic procedures when infected with a virus
    - Run antivirus scan
    - Quarantine virus when possible
    - Escalate to IT professional when needed
- Recognize the proper procedures to maintain a secure environment
    - Regular antivirus and malware scans
    - Application / operating system updates

5.0 Green IT and Preventative Maintenance

5.1 Identify environmentally sound techniques to preserve power and dispose of materials

- Environmentally hazardous substance disposal
    - Battery disposal
    - CRT disposal/replace with LCDs
    - Recycling of computers for reuse or parts
    - Toner disposal

        - Cleaning supply disposal
        - Materials that meet RoHS guidelines
    - Power management (Power saving features)
        - Shutdown/power off procedures/policies at end of day
        - Automatic power off after 15 minutes of nonuse
        - Shutdown scripts
    - Power management PCs and lower power servers replace large desktops with energy efficient laptops and thin clients

5.2 Identify green techniques, equipment and procedures

- Define Cloud computing
    - Define Virtualization (Have more than one server running on a single piece of hardware)
    - Reduced power and cooling consumption
- Duplex printing and use lower cost per page network printers
- Terminal Servers
- Energy Star rating
- Use low power NAS (network attached storage) instead of file servers
- Employee telecommuting
    - Reduced emissions
    - Reduced office space heating, lighting, etc
- Solid State drives
- Define VoIP and how it relates to Green IT
- Green building infrastructure
    - Eliminate cool air leaks in server rooms
    - Proper spacing for cooling IT equipment
    - Energy efficient cooling fans
- BIOS adjustments

5.3 Identify preventative maintenance products, techniques, and how to use them

- Liquid cleaning compounds
- Types of materials to clean contacts and connections
- Compressed air
- Cleaning monitors
- Cleaning removable media devices
- Ventilation, dust and moisture control on the PC hardware interior
- Surge suppressors
- Use of ESD equipment

Acronyms as a part of a comprehensive test preparation program

AC alternating current
AGP accelerated graphics port
BIOS basic input/output system
CD compact disc
CDROM compact disc read only memory
CDRW compact disc rewritable
CPU central processing unit
CRT cathode ray tube
DC direct current
DDR double data rate
DDR RAM double data rate random access memory
DDR SDRAM double data rate synchronous dynamic random access memory
DHCP dynamic host configuration protocol
DIMM dual inline memory module
DNS domain name service or domain name server
DSL digital subscriber line
DVD digital video disc or digital versatile disc
DVDRAM digital video disc random access memory
DVDROM digital video disc read only memory
DVDR digital video disc recordable
DVDRW digital video disc rewritable
DVI digital visual interface
EMI electromagnetic interference
EMP electromagnetic pulse
ESD electrostatic discharge
FAT file allocation table
FAT32 32bit file allocation table
FDD floppy disk drive
Gb gigabit
GB gigabyte
GHz gigahertz
HDD hard disk drive
HDMi high definition media interface
HTML hypertext markup language
HTTP hypertext transfer protocol
HTTPS hypertext transfer protocol over secure sockets layer
IDE integrated drive electronics
IP internet protocol
IR infrared
ISDN integrated services digital network
Kb kilobit
KB Kilobyte or knowledge base
LAN local area network
Mb megabit
MB megabyte
MHz megahertz
MP3 Moving Picture Experts Group Layer 3 Audio
MP4 Moving Picture Experts Group Layer 4
MPEG Moving Picture Experts Group
NIC network interface card
OS operating system
PC personal computer
PCI peripheral component interconnect
PCIe peripheral component interconnect express
PCIX peripheral component interconnect extended
PCMCIA Personal Computer Memory Card International Association
PDA personal digital assistant
RAM random access memory
RJ registered jack
RJ11 registered jack function 11
RJ45 registered jack function 45
SATA serial advanced technology attachment
SCSI small computer system interface
SD card secure digital card
SOHO small office/home office
SSID service set identifier
SSL secure sockets layer
TB terabyte
TCP transmission control protocol
TCP/IP transmission control protocol/internet protocol
UPS uninterruptible power supply
URL uniform resource locator
USB universal serial bus
VGA video graphics array
VoIP voice over internet protocol
WAP wireless application protocol
WEP wired equivalent privacy
WIFI wireless fidelity
WPA wireless protected access