Computer Proficiency Study Guide

Welcome to the general computer knowledge proficiency exam. The ultimate goal of computer proficiency is to demonstrate general computer knowledge. Establishing your ability to be an educated consumer the next time you plan to purchase, a smartphone, tablet, home PC or printer as a short list of examples.

The exam will focus around Five core principles:

- General Windows 10 knowledge, security and navigation
- Windows File Management
- Microsoft Word & Excel 2019
- Computer Hardware
- Internet Browsing and Email

Windows 10 OS

The Operating System (OS) is the main software on any computer. It provides the user with an interface to the hardware inside their computer. Computer hardware without an OS is an expensive paperweight and OS can't live without hardware. They have an undeniable tight bond.

This portion of exam explores the high level general knowledge components of modern OS's. Again, the exam does ask you to drive down into the complexities of the modern OS's, however will ask you general top level questions as you work with the OS and think of purchasing your next computer.

In 2020, 88% of PC's in America were using a Windows OS. Windows will be the focus of the of this section of the exam.

The following list are important items to have prepared for the exam:

- General Desktop Navigation of Windows 10 Operating System
- Components of a window
- Components of the taskbar
- The importance of good file management
    - Explain the purpose and identify parts of File Explorer
    - The ability to create folders and files
    - Copy, Cut & Paste folders and files
    - Use the search tool in File Explorer

System Security

There are many bad things that go bump in the night on the Internet. So much so, as computer users, we must take several steps to protect our computers and personal data. This section of the exam will test your general knowledge of various evils we can encounter and how to protect ourselves.

As you prepare and study for the exam, you should have a top two important aspects of each item listed below. The intent of this exam is not to drive down to the fine details, but to explore the general main points.

Important terms to explore in system security before exam day:

- Operating System Updates…i.e. Windows Updates
- Malware Removal (Anti-virus Software)
- Personal Privacy Protection (ID Theft)
- A secure <u>complex</u> password
    - List components in a complex password
    - Give an example of a complex password

Computer Hardware

Computer hardware and peripherals are the tangible parts of our computer. It is the pieces we take home from the store after we purchase our newest gadget. Visiting your local electronics store, you will quick be faced with many different choices in the same class of hardware.

Just the other day, I visited my local BestBuy to purchase a tablet PC. I counted nineteen different models on the shelf, all with different shapes, sizes and colors.   I quickly narrowed the nineteen choices down to three solely based on my budget. Now I have to make sense of the nerdy words and numbers I find on the sales display.

It is now the focus of the exam to begin to explore those fancy nerdy words and numbers.   Looking at the specifications of common components of computer hardware and peripherals. Remember, you not need to drive down into complex details of hardware, instead focus on the facts and figures you will see on a website or sales display during your next purchasing experience.

When dealing with specification numbers on computer hardware, sometimes a bigger number is better and sometimes a smaller number is better. Be sure to include those differences are you research the following list of items:

- Central Processing Unit (CPU)
    - GHz…1GHz vs 2GHz
    - Dual Core vs Quad Core and beyond
- Memory (RAM)
    - Capacity in MB's or GB's
        - MB = Mega Bytes
        - GB = Giga Bytes
    - What is the main function of RAM?
- Storage (Hard Drives)
    - Capacity in GB's or TB's (Tera Byte)
    - What is the main function of a Hard Drive?

- Display (Monitor) – Identify the following technical specifications of a Monitor,
  - Size vs Viewable Size
  - Resolution
  - Contrast Ratio
  - Brightness
  - Response Time
  - Dot Pitch
- Printers
  - Color vs Monochrome
  - Multifunction – Print, Scan, Copy, & Fax
  - Print Speed
  - Print Resolution
  - Cartridges – Black, Cyan, Magenta and Yellow

An example of a question, you will need to select the best hardware choice based on two options:

XPS 15 Laptop A
~~$2,899.00~~ **$2,199.00**

12th Gen Intel® Core™ i9-12900HK

Windows 11 Home

NVIDIA® GeForce RTX™ 3050 Ti, 4 GB GDDR6, 40 W

32 GB, 2 x 16 GB, DDR5, 4800 MHz, dual-channel

1 TB, M.2, PCIe NVMe, SSD

15.6-in. touch display

Starting at 4.06 lbs [i]

XPS 15 Laptop B
~~$1,899.00~~ **$1,399.00**

12th Gen Intel® Core™ i7-12700H

Windows 11 Home

NVIDIA® GeForce RTX™ 3050, 4 GB GDDR6, 40 W

16 GB, 2 x 8 GB, DDR5, 4800 MHz, dual-channel

512 GB, M.2, PCIe NVMe, SSD

15.6-in. display

Starting at 4.06 lbs [i]

Comparing the two laptops above, the following questions could be asked:

1. Based only on Memory, should I purchase computer A or B?
2. Based only on storage, should I purchase computer A or B?

Internet Browser and Email

It is difficult to not use the Internet in our modern lives. Surfing the Internet and sending an email is an important piece of our Internet usage. The following items will be important on the exam:

- Components of a Web Browser
  - Address Bar
  - URL
  - History
  - Bookmarks/Favorites
  - Security
- Email
  - What is an email address
  - Netiquette when writing an email message
  - Subject line and body of an email
- What is a URL
  - Identify the following components of a URL
    - Host name
    - Domain name
    - FQDN – Full Qualified Domain Name

File Management

We amass a large amount of computer files in our personal lives and at work. Every time I take a picture with my iPhone, I have a file that must be managed. The most important aspect of our files is the ability to quickly find them later.

This is the number one skill employees are looking for in computer proficiency. It is why this section of the proficiency exam must be 100% to pass the exam. Skills to know before starting your exam:

- How to create a folder
- Copy/Cut/Paste
- Proper characters to use when naming a file or folder.
- Zip and Unzip compressed items
- Use a File Path to locate a folder or file.

Microsoft Office

Office is a large suite of production software. Tools to help us build a home budget to writing our resume after graduation. The two components of Office to be tested are Word and Excel.   Office exam will be in two parts:

Students should be prepared to demonstrate the following in Microsoft Word:
- All basic tools on the Home Tab ribbon including:
    - Copy/Paste & Format Painter (Clipboard Group)
    - Font Group tools – all basic formatting tools including, but not limited to:
        - Font color, size, font face, text effects
    - Paragraph Group: bullets, numbering, alignment, line spacing, horizontal alignment tools (all), decrease/increase indent, borders & "bucket fill"
    - Styles Group: basic knowledge regarding selecting text and apply a style to it
- Design Tab:
    - Theme, Page Color, Page Border.
- Layout Tab:
    - Section breaks, columns, margins, orientation
- Insert Tab:
    - Insert an online image, WordArt, Text Box
    - Using/enhancing text boxes
    - How to properly wrap text around an image or other object
    - Headers, footers, page numbers
    - Apply enhancements and resizing to objects
- General Knowledge:
    - Properly name/rename a document
    - Choose appropriate background colors for good, readable contrast with font color
    - Spell Check
    - Save and upload to Blackboard assignment interface

Tools to be demonstrated in Excel Final

- Cell formatting
- Adding/removing – rows and sheets
- Cell Referencing – Absolute and Relative
- Formulas with cell accurate cell referencing
- Functions and their arguments. It is important to make sure you have a solid understanding of how to build arguments within the functions. Review Excel Practice lab #4 and our Excel reading. The Round function is part of the Excel final project.
- Sheet names
- Print Set-up - Orientation, Print Area, Footer, Scaling

One of Excel's primary purposes is to make it easy and fast to get accurate answers to calculations. One way this is accomplished is with accurate cell referencing in formulas and functions. Although formatting is important in this project, the main focus is to demonstrate your ability to create and use formulas and functions correctly and appropriately.