IT ESSENTIALS V. 4.1
Module 6
Fundamental Laptops and Portable Devices

6.0 Introduction		
1.	What was the original laptop used by the astronauts in space missions in the early 80s?	Grid Compass 1101
2.	What year was the TRS-80 introduced?	1983
3.	What was the first laptop with VGA graphics?	Compaq SLT/286
4.	What laptop established the form factor for all modern laptops?	Macintosh Powerbook 100 Series
6.1 Describe laptops and other portable devices		
5.	What is a smartphone?	Cell phones with many built-in PDA capabilities
6.1.1 Identify some common uses of laptops		
6.	What is the most significant feature of a laptop?	Its compact size
7.	What is another popular feature of laptops?	Portability
8.	What are some common uses for the laptop?	Taking notes in school; presenting information at business meetings; accessing data away from home or office; playing games and watching movies while traveling; accessing the Internet in a public place
6.1.2 Identify some common uses of PDAs and Smartphones		
9.	When were PDAs first introduced?	1970s
10.	What is a PDA?	An electronic personal organizer with tools to help organize information
Worksheet: Research Laptops, Smartphones, and PDAs		
6.2 Identify and describe the components of a laptop		
11.	What are some common laptop features?	1. Small and portable 2. Integrated display screen in the lid 3. Integrated keyboard in the base 4. Run on AC or rechargeable battery 5. Support hot-swappable drives and peripherals
6.2.1 Describe the components found on the outside of the laptop		
12.	Where are ports, connections, and drives located on the laptop?	Front, back, and sides
13.	What is used to add functionality to the laptops such as memory, a modem or a network connection?	PC Card or Express Card
14.	What do laptops require for external power?	A port

15.	Where are status indicators, ports, slots, connectors, bays, jacks, vents and a keyhole located?	On the exterior of the laptop
16.	What devices are shut down when the laptop is in standby mode?	Monitor, hard drive, CPU
17.	What battery types are available for laptops?	Lithium-ion (Li-Ion) Lithium-polymer (Li-Poly)
18.	What is the infrared port?	A line-of-sight wireless transceiver that is used for data transmission

Virtual Laptop: Explore Laptop

6.2.2 Describe the components found in the inside of the laptop

19.	What do laptops used to add functionality to the laptop?	Input devices
20.	How do you gain access to configuration utilities for input devices?	Start > Control Panel > Mouse
21.	What device moves the pointer?	Touch pad
22.	What device turns up the volume?	Volume control
23.	What device turns on the laptop	Power button
24.	What device switches to the external monitor?	FN F7
25.	What is the purpose of the FN key?	To activate a second function on a dual-purpose key
26.	What does the LCD cut off switch do?	Tells the CPU to conserve power by extinguishing the backlight and turning off the LCD
27.	What is wrong if the LCD remains dark while the laptop is open?	The LCD cutoff switch is broken or dirty

Virtual Laptop: Keyboard

6.2.3 Describe the components on the laptop docking station

28.	What is a base station?	A device that attaches to AC power and to desktop peripherals
29.	What are the two types of base stations?	Docking stations and port replicators
30.	What is the difference between a port replicator and a docking station?	Port replicator is smaller and do not have speakers of PCI slots

Worksheet: Docking Stations True or False Questions

6.3 Compare and Contrast desktop and laptop components

31.	Laptop components are proprietary. What is meant by this statement?	You might not be able to use components made by one laptop manufacturer to repair a laptop made by another manufacturer

6.3.1 Compare and Contrast desktop and laptop motherboards

32.	What are SODIMMs?	Small outline dual in-line memory modules

6.3.2 Compare and Contrast desktop and laptop processors

33.	What is the brain of the computer?	CPU
34.	What does the CPU do?	Interprets and process instructions that are used to manipulate data
35.	What do laptop processors use to modify the clock speed as need to reduce power	CPU throttling

	consumption and heat?	
6.3.3 Compare and Contrast desktop and laptop power management		
36.	What does power management control?	The flow of electricity to the components of a computer
37.	Do laptops use AC or DC power?	DC
38.	What are the two methods of power management?	APM – Advanced Power Management ACPI – Advanced Configuration and Power Interface
39.	What controls power management when using ACPI?	The operating system
6.3.4 Compare and Contrast desktop and laptop expansion capabilities		
40.	How are expansion devices attached to a desktop?	Serial, parallel, USB, and firewire ports
41.	What standards make it possible to connect and remove external components without powering off the system?	USB and Firewire
42.	What are the three types of storage used for data storage?	Magnetic, flash, optical
43.	What are the benefits of using a solid state drive (SSD)?	Faster access to data, higher reliability, reduced power usage
44.	What are the three types of optical media?	CD, DVD, Blu-ray (BD)
45.	What is the storage capacity of a CD?	700 MBs
46.	What is the storage capacity of a DVD?	8.5 GB
47.	What is the storage capacity of a BD?	25 GB – single layer disk 50 GB – dual layer disk
48.	What are the three types of PC cards?	Type I, Type II, Type III
49.	What is the size of a PC card?	85.6 mm x 54 mm
50.	How thick is a Type I PC card?	3.3 mm
51.	How thick is a Type II PC card?	5 mm
52.	How thick is a Type III PC card?	10.5 mm
53.	What widths are PC Express cards?	34 mm or 54 mm
Worksheet: Laptop Expansion Questions		
6.4 Explain how to configure laptops		
54.	How do you customize a laptop for a specific purpose?	Add external components
6.4.1 Describe how to configure power settings		
55.	Identify the Power Management States S0 S1 S2 S3 S4 S5	S0 – computer is on; CPU is running S1 – CPU & RAM are receiving power, unused devices are powered down S2 – CPU is off; RAM is refreshed. System in in lower mode than S1 S3 – CPU is off, RAM set to slow refresh rate S4 – CPU & RAM is off. Windows XP - Hibernate mode S5 – Computer off; nothing has been saved
56.	Where do you enable ACPI power management?	BIOS

57.	What key do you press to enter BIOS?	Delete or F2
58.	What does the Power Option feature in Windows XP do?	Allows you to reduce the power consumption of devices
59.	How do you configure our power settings?	Start > Control Panel > Power Options
60.	What are power schemes and power plans?	A collection of hardware and system settings that manage the power usage of the computer
61.	What is one of the biggest power consumers on a laptop?	The hard drive
62.	Which option in Windows XP saves documents and applications in RAM?	Standby
63.	What is standby mode called in Windows Vista?	Sleep
64.	What are the two low battery warnings?	Low Battery Alarm Critical Battery Alarm
Worksheet: Match ACPI Standards		
6.4.2 Describe the safe installation and removal of laptop components		
65.	What is meant by hot swappable?	They can be removed and replaced while the computer is on
66.	What is an auto-switching AC adapter?	Adapters can switch between 110V and 220V
67.	What is laptop expansion memory called?	SODIMM
Virtual Laptop: Components and Devices		
6.4.3 Laptop Communication Hardware installation and configuration		
68.	What is Bluetooth?	A wireless industry standard that enables portable devices to communication over short distances
69.	What is the infrared port?	A line-of-sight wireless transceiver that is used for data transmission
70.	If the cellular WAN utility software is not in the task bar, where should you find it?	Start > Programs
6.5 Compare the different mobile phone standards		
71.	Are cell phone standards uniform?	No
72.	What kind of standard do first generation cell phones use?	Analog
73.	What are the standards for second generation cell phones?	GSM (Global System for Mobile) IDEN (Integrated Digital Enhanced Network) CDMA (Code Division Multiple Access)
74.	What generation of cell phones allows you to send and receive test, photos and videos?	Third generation
75.	What is the standard for fourth generation?	HSDPA
76.	What is the Internet standard for text messaging?	SMS – Short Message Services
77.	What Internet standard is used for sending and receiving photos and videos?	MMS – Multimedia Message Service
6.6 Identify common preventive maintenance techniques for laptops and portable devices		

6.6.1 Identify appropriate cleaning procedures		
78.	What is the easiest, least expensive way to protect and extend the life of a laptop?	Proper routine cleaning
79.	How should you clean a laptop keyboard?	Soft, lint-free cloth that is lightly moistened with water or computer-screen cleaner
80.	How do you clean the screen of a PDA?	Soft cloth with a small amount of non-abrasive cleaning solution
81.	How do you clean a CD or a DVD disc?	Gently wipe with a lint-free cotton cloth from the center of the disc outward
6.6.2 Identify optimal operating environments		
82.	What is the optimal operating environment for a laptop?	Clean, free of potential contaminants with the temperature and humidity range specified by the manufacturer
83.	What are the optimal operating conditions for a laptop?	Between 10% and 80% humidity between 45 and 90 degrees Fahrenheit
6.7 Describe how to troubleshoot laptops and portable devices		
84.	How do you determine if a repair is cost effective?	Compare cost of repair with replacement cost less salvage value
6.7.1 Review the troubleshooting process		
85.	What is troubleshooting?	Analyzing the problem and determining the cause of the error to repair the computer
86.	When can you establish a theory of probable cause?	After talking with the customer
87.	Disconnecting peripherals is an example of	Determining an exact cause
88.	When do you establish a plan of action?	After you have determined the exact cause of the problem
Worksheet: Research Laptop Problems		