SCHEME OF VALUATION

(Scoring Indicators)

Revision: 2015			Course Code: 4131	
Course Title: Computer System Hardware				
Qst. No	**Scoring Indicator**	**Split up Score**	**Sub Total**	**Total**
	PART A			
1	i. ATX ii. Micro ATX iii. ITX Any Two	1+1	2	
2	i. DIP ii. LGA iii. PGA Any Two	1+1	2	
3	i. Web Cams ii. MIDI devices iii. Digital Camera iv. Camcorder Any two	1+1	2	
4	PATA/IDE (ParallelATA) is a standardor connecting and transferring data from harddisk drives (HDDs) to computer systems using Parallel communication SATA (Serial Advanced Technology Attachment) is a standardor connecting and transferring data from harddisk drives (HDDs) to computer systems using Serial	1+1	2	

5	communication. i. SODIMM ii. MicroDIMM	1+1	2	10
	PART B			
1	i. perform a process known as a power-on self-test (POST) ii. verifies the integrity of the BIOS itself iii. verifies and confirms the size of primary memory iv. analyzes and catalogs other forms of hardware, such as buses and boot devices. v. the BIOS selects the boot device highest in the configured boot order and executes the master boot record (MBR) vi. call its associated operating system's boot loader and continue booting up.	1 each	6	30
2	i. A device driver is a computer program that operates or controls a particular type of device that is attached to a computer. ii. A driver provides a software interface to hardware devices, enabling operating systems and other computer programs to access hardware functions without needing to know precise details about the hardware being used. iii. A driver communicates with the device through the computer bus or communications subsystem to which the hardware connects. iv. Drivers are hardware dependent and operating-system-specific.	4*1.5	6	

3		i. Attach the device using a local or network port and connect the power. ii. Install and update the device driver and calibrate the device. iii. Configure options and settings. iv. Print a test page. v. Verify compatibility with the operating system and applications. vi. Educate users about basic functionality.	1 each	6	
4	i. ii. iii. iv. v. vi.	have no moving parts memory islimited to a finite number of write (including erase) operations read contents more quickly can consume less power produce less heat more reliable and less susceptible to damage fromphysical shock	1 each	6	
5	i.	CRT a. a device calledan electron gun shoots a beam of electrons toward the back side of the monitor screen b. back of the screen is coated with special chemical dots called phosphorus that glow when electrons strike them. c. glow ofthe phosphors decays very quickly, requiring the electron beam's regular return to each phosphor to	3+3	6	

	sustain the glow ii. LCD a. It was found that by combining transistors with these liquid crystals, patterns could be formed. These patterns could be combinedto represent numbers or letters. b. An active-matrix screen is made up of several independent LCD pixels. Atransistor at each pixel location c. A passive-matrix display does not have a dedicated transistor for each pixelor subpixel but instead a matrix of conductive traces			
6	1. Passcode Locks 2. Remote Wipes and Locators 3. Remote Backup 4. Operating system updates	4×1.5	6	
7	i. laptops often have a proprietary docking port ii. A docking port is used to connect the laptop to a special laptop-only peripheral known as adocking station iii. A docking station is basically an extension of the motherboard of a laptop. iv. The docking stationcan function as a port replicator.	4×1.5	6	
III a	Part – C A chipset is a collection of chips or circuits that perform interface and peripheral functions for the processor. The functions of chipsets can be divided into two major functional groups, calledNorthbridge and Southbridge.	2+2+2	6	15

III b	Northbridge Southbridge i. Date ii. Time iii. Hard drive/optical drive configuration iv. Memory v. CPU settings, such as overclocking vi. Integrated ports (settings as well as enable/disable) vii. Boot sequence viii. Power management ix. Virtualization support x. Security (passwords, trusted platform module settings, LoJack) Any three with explanation	3+3+3	9	
IV a	Any three with explanation i. Power-On Self-Test ii. is the diagnostic testing sequence iii. runs to determine if the computer keyboard, random access memory, disk drives, and other hardware are working correctly. iv. POST runs before the computer's video card is activated patterns of beeps contain messages about the nature of the problem detected.	6	6	15
IV b	○ Asynchronous DRAM ▪ FPM DRAM ▪ EDO DRAM ▪ BEDO DRAM ○ Synchronous DRAM	3+3+3	9	

	▪ SDR SDRAM ▪ DDR SDRAM ▪ DDR2 SDRAM ▪ DDR3 SDRAM ▪ DRDRAM v.			
V a	A switched-mode power supply (SMPS) is an electronic circuit that converts power using switching devices that areturned on and off at high frequencies A basic isolated AC to DC switched-mode power supply consists of: • Input rectifier and filter • Inverter consisting of switching devices such as MOSFETs • Transformer • Output rectifier and filter • Feedback and control circuit Advantages of switched-mode power supplies: • Higher efficiency of 68% to 90% • Regulated and reliable outputs regardless of variations in input supply voltage • Small size and lighter • Flexible technology • High power density Disadvantages: • Generates electromagnetic interference • Complex circuit design • Expensive compared to linear supplies	6	6	15
V b	**RAID 0** RAID 0 consists of striping, but no mirroring or parity. compared to a spanned volume, the capacity of aRAID 0	3+3+3	9	

	column is the same; it is the sum of the capacities of the disks in the set. **RAID 1** RAID 1 consists of data mirroring, without parity or striping. Data is written identically to two drives, therebyproducing a "mirrored set" of drives. RAID 5 Combines the benefits of both RAID 0 and RAID 1, creating a redundant stripedvolume set. RAID 6 It is essentially RAID 5 with the ability to lose two disks and still function. RAID 6 uses theequivalent of two parity disks as it stripes its blocks across all disks in a fashion similar tothe way RAID 5 does.			
VIa	Unit – II • Small Computer System Interface (SCSI) • It is a set of standards for physically connecting and transferringdata between computers and peripheral devices • SCSI standards define commands, protocols, electrical, opticaland logical interfaces • SCSI is most commonly used for hard disk drives • Parallel SCSI which uses a parallel bus design	6	6	15
VI b	• Tape Backup Devices • Flash Memory • SD and Other Memory Cards • USB Flash Drives • USB-Attached External Disk Drives • eSATA-Attached External Disk Drives	3+3+ 3	9	

VII a	1. DVI a. These digital interfaces offer much higher performance than theoriginal digital standards, such as CGA and EGA b. It uses digital transmission c. Three main categories of connectors are DVI-A, DVI-D, DVI-I 2. HDMI a. High-Defnition Multimedia Interface (HDMI) is an all-digital technology that advancesthe work of DVI to include the same dual-link resolutions using a standard HDMI cablebut with higher motion-picture frame rates and digital audio right on the same connector. b. HDMI cabling also supports an optional Consumer Electronics Control (CEC) feature thatallows transmission of signals from a remote control unit to control multiple devices without separate cabling to carry infrared signals c. HDMI is compatible with DVI-D and DVI-I interfaces through proper adapters, butHDMI's audio and remote-control pass-through features are lost.	3×2	6	15
VII b	• A barcode reader (or barcode scanner) is a specialized input device commonly used in retail and other industrial sectors that manage inventory • The systems that the reader connects to can be so specialized that they have no other input device. • Barcode readers can use LEDs or lasers as light sources and can scan one- or two-dimensional barcodes • Barcode readers can connect to the host system in a	9	9	

	number of ways, but serial connections, such as RS-232 and USB, are fairly common. • The simplest software interfaces call for the reader to be plugged into the keyboard's PS/2 connector using a splitter, or "wedge," that allows the keyboard to remain connected. • The scanner converts all output to keyboard scans so that the system treats the input as if it came from a keyboard.			
VIII a	• A thin client is any machine that divests itself of all or most • local storage and varying levels of RAM and processing power without necessarily giving up all ability to process instructions and data. • In the extreme, a thin client resembles a dumb terminal, only displaying graphical user interface output to the monitor and relaying input from the mouse and keyboard back to the server • The ramifcation of having clients with low processing and storage capabilities is that there must be one or more servers with increased corresponding capacities. • Thin clients have no offline capability, requiring constant network connectivity. • Workforces that require employees to be independent or mobilewith their computing power lean away from thin clients as well, opting for laptops and similar technology	6	6	15
VIII b	1. Print head/ink cartridge 2. Head carriage, belt, and stepper motor 3. Paper-feed mechanism 4. Control, interface, and power circuitry	3+3+3	9	

IX a	1. Battery Life 2. Storage Capacity 3. Display 4. Processing Speed 5. Thin and Light	3*1.5	6	
IX b	1. Laptops are similar to desktop computers in architecture in that they contain many partsthat perform similar functions 2. The parts that make up a laptop are completelydifferent from those in desktop computers 3. To overcome space limitations, laptop parts are physically much smaller and lighter,and they must ft into the compact space of a laptop's case. 4. Laptop parts are designed toconsume less power and to shut themselves off when not being used 5. most laptop components are proprietary—the motherboard is especiallyproprietary, and the LCD screen from one laptop will not necessarily ft on another.	9	9	
X a	**Portability** Laptops are designed to beportable. They run on batteries, so you aren't tied to one spot at home or at the offce. Desktops just aren't that portable. **Cost** Laptops tend to cost more than desktop computers with similar features. The primaryreason is that portability requires small components and unique proprietary designs so thatthose components ft into the small size necessary **Performance** Compromises must often be made between performance and portability,and considering that portability is the major feature of a laptop, performance is what usuallysuffers. **Expandability** Because desktop computers were designed to be modular, their capabilitiescan be upgraded quite easily. It is next to impossible	4×1.5	6	15

	to upgrade the processor or motherboardon most laptops. **Quality of construction** Durability is important in a desktop too, but it won't be tested asmuch as in a laptop			
X b	i. Keyboards ii. Trackball iii. Touchpad iv. Point stick v. Touch Screen	3*3	9	