Topic: SMPS

• Assignment Level Basic

1. What is SMPS?

A switch – mode power supply , sometime known as a switch mode powe supply or SMPS , is an electronic power supply that integrates a switching regulator for efficiant electrical power conversion . Like other supplies, an SMPS transfers power from a DC or AC source to DC loads while converting voltage and current . .

SMPS : SWITCHED MODE POWER SUPPLY /

SWITCHING MODE POWER SUPPLY .

Like other type of power supply , a SMPS power supply transfers power from a source – usually an ac outlet – to a dc device . What sets the smps apart is its ability to regulate the output voltage . It can increase or decrease the output voltage to maintan a constant output regardless of changes in load .

1. What is the process of SMPS?

A switched mode power supply is an electronic circuit that converts power using switching devices that are turned on and off at frequencies , and storage components such as inductors or capacitors to supply power when the switching deviceis in its non – conduction state .

Smps is the abbreviation of switching mode power supply , a kind of high frequency power conversion device and a power supply device .its function is to convert a level of voltage to the voltage or current required by the client through different forms of architecture .

• Assignment Level Intermediate

1. - DO a practical to install SMPS.

Yes , we are complete done a practical to install SMPS .

**The steps for installing the SMPS on your computer are given below: -**

* Before Replacing the SMPS unplug all the wires and cables attached to the CPU.
* Gather all your tools and open the CPU housing which is usually the right-hand side of the CPU box when looking at the back of the box .

2How many sata connectors are there in normal smps?

Therefore nowadays all the SMPS comes with 24 pin detachable connector ( 20 + 4 )that can be split in to 20 pin and 4 pin cables .

There are two principal SATA cable connector types power and data . The simplestway to identify the different between the two types is that data is the smaller of the two ( typical 7 – pin ) whereas power is larger ( typical 15 pin ) .

• Assignment Level Advance

1. Do a practical to troubleshoot a smps without plugging it to the system.

Yes , we are complete done a practical to troubleshoot a SMPS without plugging it to the system .

**1) The power is not reaching the computer system –**

1. Check the power from the source.
2. Check the setting of the voltage in CPU.
3. Check the front panel of motherboard.
4. Check the power supply connections to the motherboard.
5. Check the SMPS without connecting to the motherboard.

Open your computer's case and remove everything connected to your SMPS first. You'll need a paperclip to start an SMPS without a motherboard. The paperclip will act as a bridge and connect the SMPS to itself, so if it does not turn on, your SMPS may be faulty.

2. How many pins does atx power connector have?

The ATX 24 pin main power connector is the standard motherboard power connector used in nearly every computer. This is the large 24-pin connector that usually attaches near the edge of the motherboard.

It is a connector that supplies electricity to a computer system's components. The 24-pin ATX-style connector supplies electricity to the motherboard and other parts of the computer system. As a component of their Advanced Technology Extended (ATX) motherboard specification, it was created by Intel in 1995.

ATX specification includes not only Power Supply Unit, but also interface to case and motherboard. In addition to the old AT standard, ATX 2.0 has one extra voltage line available (+3.3V), a connector chain-lined to the single 20-pin and a power-on wire that allows Software to turn off the PSU.

Topic: RAM

• Assignment Level Basic

1. What is RAM?

RAM ( RANDOM ACESS MEMORY ) is the hardware in a computing device where the operating system ( os ) , application programs and data in current use are kept so they can be quickly reached by the device’s processor .

RAM is a common computing acronym that stands for random-access memory. Sometimes it's called PC memory or just memory. In essence, RAM is your computer or laptop's short-term memory. It's where the data is stored that your computer processor needs to run your applications and open your files.

2. What is the full form of RAM?

The full form of RAM is RANDOM ACESS MEMORY .

RAM ( RANDOM ACESS MEMORY ) is the hardware in a computing device where the operating system ( os ) , application programs and data in current use are kept so they can be quickly reached by the device’s processor .

• Assignment Level Intermediate

1. What are the types of ram?

There are main two types of Ram .

1 – Dynamic Ram

1. – Static Ram .

DRAM is widely used as computer’s main memory . Each DRAM memory cell is made up of a transistor and capacitor within an integrated circuit and a data bit is stored in the capacitor .

2. Do a practical to identify RAM.

Yes , we are complete done a practical of identify RAM .

Most consumer RAM modules will come with a label to identify the type of RAM it is. Typically, these labels will either be a sticker applied directly to the stick of RAM, engraved onto the fancy heat spreader on higher-performance modules, or may be printed directly onto the circuit board.

RAM allows your computer to perform most of its everyday tasks, such as loading applications, browsing the internet, editing a spreadsheet, or experiencing the latest game. Memory also allows you to switch quickly among these tasks while also remembering where you are in each task.

For most devices you'll use, RAM is measured in Gigabytes (GB), often somewhere between 2GB and 64GB (or even 128GB on higher-end systems). RAM can come in the form of memory modules soldered onto your system's mainboard or removable modules called DIMMs that slot into a motherboard .

• Assignment Level Advance

1. Do a Practical to identify ram and install it in a proper system .

Yes , we are complete done a practical to identify ram and install it in a proper system .

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**How to Install RAM in Your PC**

1. Unlock the latches on the RAM slot. Some boards have them on both sides of the slot, while many now just have one. ...
2. Line up the first stick. ...
3. Place the RAM in the slot. ...
4. Press down on the RAM until it makes a clicking sound. ...
5. Repeat the process with each stick of RAM until you're done.

Topic: Device and cable

• Assignment Level Basic

1. What are the types of devices?

A device is physical piece of hardware that performs one or more computing functions .

Device, a colloquial term encompassing different types of computers, such as desktops, laptops, tablets, smartphones, etc. Device file, an interface of a device driver. Peripheral, any device attached to a computer that expands its functionality .

Peripherals are commonly divided into three kinds: input devices, output devices, and storage devices (which partake of the characteristics of the first two).

* input devices: For raw data input..
* Output devices: To disseminate data and information.
* Storage devices: For data and information retention.

2. What are the types of cable?

**Cables are classified into 5 types depending upon their purpose as follows:**

* Ribbon Electric Cables. It consists of multiple insulated wires running parallel with one another and is used for transmission of multiple data simultaneously. ...
* Shielded Cables. ...
* Twisted Pair Cables. ...
* Coaxial Cables. ...
* Fibre Optics Cable.

• Assignment Level Intermediate

1-What cables are used to connect printer?

A USB cable connect your printer to your computer so you have a direct connection every time you print . The majority of printers are compatible with a use 2.0 cable .

Attach a Category 5 or better Ethernet cable from the printer to the network or router socket. Use an Ethernet switch or router, and two or more Ethernet cables. Connect the computer to the switch or router with one cable, then connect the printer to the switch or router with the second cable.

Simply plug the USB cable from your printer into an available USB port on your PC, and turn the printer on. On the taskbar, select the Search icon, type Printers in the search bar, and then select Printers & scanners from the search results to open the Printers & scanners system setting.

2-What was the first cable founded by Apple for data transfer?

Lightning to usb cable ( 1 m ) was the first cable founded by apple for data transfer .

There are three main types of data cables: Coaxial cable, Fiber Optic cable, and Twisted Pair.

• Assignment Level Advance

1. Do a practical to identify the sata cables.

Yes , we are complete done a practical to identify the sata cable .

SATA (also referred to as Serial ATA) stands for Serial Advanced Technology Attachment, an industry-standard bus interface for connecting a computer's host bus adapter to storage devices such as hard disk drives (HDD), optical drives and solid-state drives (SSD).

SATA transfers data one bit at a time between a drive and its host, using a seven-pin data cable and 15-pin drive power connector cable. The SATA cable results in a higher signaling rate, which corresponds to faster data throughput.

Serial Advanced Technology Attachment, also known as Serial ATA or SATA, enables mass storage devices, such as hard drives and optical drives, to communicate with the motherboard using a high-speed serial cable over two pairs of conductors.

Usually, the color that has the most ports are the Primary SATA controller ports (usually black). The color that has even number of ports (usually 2) are RAID-capable (if your motherboard supports it, and I've seen yellow and red), and the secondary SATA controller ports are usually red in color.

A SATA data cable is flat, typically red-colored, with small identical 7-pin connectors on each end that have recognizable L-shaped notches. The connectors may be straight or angled to 90 degrees, some of them have metal retention clips .

2-Do a practical to identify and install the cables in the system .

Yes , we are complete done a practical to identify and install the cables in the system .

The basic key difference between wires and cables is that a wire is a single conductor whereas a cable is a group of conductors. Although, these conductors are made of a common material- copper or aluminium. Usually, the wires are bare and are twisted. But, some of the wires are coated with thin PVC layer.

Cables can be identified quickly and the identification will not wear away. Phase marking cable ties are available with L, L1, L2, L3 for identification of live wires, and N for neutral wires. These enable easy identification of neutral and live wires in single-phase and multi-phase electrical installations .

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* Coaxial Cables. ...
* Fibre Optics Cable.

Topic: Expansion card and slots

• Assignment Level Basic

* 1. Why expansion card needed?

An expansion card is an electronic card/board that is used to add extra functionality to a computer. It is inserted into an expansion slot on the motherboard of a computer.

The primary purpose of an expansion card is to provide or expand on features not offered by the motherboard. For example, the original IBM PC did not have on-board graphics or hard drive capability.

Expznsion card is also known as graphics cards, they are designed to process and render graphics so the computer monitor can display images. In addition to video cards, sound cards are available as expansion cards. Sound cards live up to their namesake by providing sound output.

2-Why expansion slots needed?

In computers, a slot, or expansion slot , is an engineered technique for adding capability to a computer in the form of connection pinholes (typically, in the range of 16 to 64 closely-spaced holes) and a place to fit an expansion card containing the circuitry that provides some specialized capability, such as video ...

An expansion slot is a socket on the motherboard that is used to insert an expansion card (or circuit board), which provides additional features to a computer such as video, sound, advanced graphics, Ethernet or memory .

Computers have expansion slots to give the user the ability to add new devices to their computer. For example, a computer gamer may upgrade their video card to get better performance in their games. An expansion slot allows them to remove the old video card and add a new video card without replacing the motherboard .

For example, if you want to install a new video card in your computer, you need to purchase a video expansion card, and then install the card into a compatible expansion slot. Depending on the form factor of the case and motherboard, the computer system usually has one to seven expansion slots .

• Assignment Level Intermediate

1. What are the types of expansion card?

**Types of expansion cards in a computer**

* Interface card (ATA, Bluetooth, EIDE, FireWire, IDE, parallel, RAID, SCSI, serial, and USB).
* MIDI.
* Modem.
* MPEG decoder.
* Network card.
* Sound card.
* Tuner card.
* Video capture card.

Expansion slots used in PCs are usually some form of PCI (Peripheral Component Interconnect), AGP (Accelerated Graphics Port), or PCIe (PCI Express).

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Expansion slots used in PCs are usually some form of PCI (Peripheral Component Interconnect), AGP (Accelerated Graphics Port), or PCIe (PCI Express).

• Assignment Level Advance

1. Do a practical to identify the types of expansion slots

Yes , we are complete done a practical to identify the types of expansion slots .

In computing, an expansion card is a printed circuit board that **can** be inserted into an electrical connector, or **expansion slot** on a computer's **motherboard** ...

The expansion slot opening is generally located on the back of a PC and provides an electrical connection to the motherboard for an expansion card .

Most computers made after 2005 (including Macintosh) come with PCI-E slots. These can be difficult to identify, as the length of the slot can vary. These variations are called "Lanes", and are usually referred to by a number followed by an x (1x 8x 16x, etc.) The picture shows a 16x PCI slot.

An expansion card can be plugged into a slot with a higher number, but not with a lower number. For example, a x1 expansion card will fit with any slot (it will still run at its own speed, though, not the speed of the slot) but a x16 device will not physically fit into a x1, x2, x4, or x8 slot.

1. Do a practical to install the Graphics card.

Yes , we are complete done a practical to install the graphic card .

Installing a graphics card is a straightforward process that requires three things: a new graphics card, your computer, and a Phillips-head screw driver. Be sure to turn off your PC and unplug it from the wall before you begin.

**How to Install a New Graphics Card**

1. Step 1: Preparing Your PC. ...
2. Step 2: Remove Expansion Slot Plates. ...
3. Step 3: Open Your PCIe Slot. ...
4. Step 4: Install the Graphics Card. ...
5. Step 5: Attach Your PSU Connectors. ...
6. Step 6: Connect Your Monitors and Boot the PC. ...
7. Step 7: Install or Update Drivers.

3. Do a practical to install LAN card

Yes , we are complete done a practical to install LAN card

A  network card, network adapter, LAN Adapter or NIC (network interface card) is a piece of computer hardware designed to allow computers to communicate over a computer network.

Remove the strap before you switch on the power. Now take the NIC card and install it into one of the PCI slots by aligning the guide notches with the PCI slot. Press straight down with gentle pressure until the card snugly fits into the PCI slot. Secure the card with a single screw used to attach the card to the PC .

Topic: I/O Ports

• Assignment Level Intermediate

1. What is I/O ports?

(Input/Output port) An I/O port is a socket on a computer that a cable is plugged into. The port connects the CPU to a peripheral device via a hardware interface or to the network via a network interface.

The input/output units, that is the devices that allow the introduction of data and the display of the results (keyboard, mouse, monitor, printers, etc.), are external to the Matherboard, and are connected through appropriate connectors, called ports of connection or input/output .

**Input Output Ports/ Connections**

* Serial.
* Parallel and Universal Serial Bus.
* PS-2 Port.
* Infrared Port.
* Bluetooth Port.
* Firewir

1. List out the I/O ports available

**Some important types of ports are as per follows:**

* Serial Port : Used for external modems and older computer mouse. ...
* Parallel Port : Used for scanners and printers. ...
* Universal Serial Bus (or USB) Port : ...
* Firewire Port : ...
* Ethernet Port :

1. Do a practical to identify the I/O ports.

Yes , we are complete done a practical to identify the i/o ports .

**There are two types of ports :**

1. **Internal Port:**It connects the system’s motherboard to internal devices like hard disk, CD drive, internal Bluetooth, etc.
2. **External Port:**It connects the system’s motherboard to external devices like a mouse, printer, USB, etc.

Topic: BIOS & CMOS

• Assignment Level Basic

1. What is BIOS?

A basic input/output system or BIOS is a program fixed and embedded on a device's microprocessor that helps to initialize hardware operations and manage the data flow to and from the operating system (OS) at the time of bootup. Gary Kildall, a U.S. computer scientist, invented the word BIOS in 1975 .

BIOS (basic input/output system) is the program a computer's microprocessor uses to start the computer system after it is powered on. It also manages data flow between the computer's operating system (OS) and attached devices, such as the hard disk, video adapter, keyboard, mouse and printer.

BIOS is a program, stands for basic input/output system, which is stored in nonvolatile memory like ROM (Read Only Memory) or flash memory that allows you to set up and access your computer system at the greatest basic level.

BIOS, or Basic Input/Output System, is software stored on a small memory chip, also known as firmware. BIOS is found on the motherboard, and it is the very first software to run after a computer starts .

* 1. What is CMOS ?

A complementary metal-oxide semiconductor (CMOS) is the semiconductor technology used in most of today's integrated circuits (ICs), also known as chips or microchips. CMOS transistors are based on metal-oxide semiconductor field-effect transistor (MOSFET) technology.