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Q1 (a) Discuss a few limitations of image scanners? How Optical Character Recognition (OCR) device overcomes these limitations?

Answer:

Image Scanner Limitation:

Image produced by the scanner can take up a lot of memory space.

Image lose some Quality in the scanning and digesting process

Benefits or advantages of OCR:

Following are the benefits or advantages of OCR:

- In spite of rough handling, one can read the OCR information with high degree of accuracy. Flatbed scanners are very accurate and can produce reasonably high quality images.
- The processing of OCR information is fast. Large quantities of text can be input quickly.
- A paper based form can be turned into an electronic form which is easy to store or send by mail.
- It is cheaper than paying someone amount to manually enter large amount of text data. Moreover it takes less time to convert in the electronic form.
- The latest software can re-create tables as well as original layout.

Q1. (b) Elaborate the use of Magnetic Ink Character Recognition Device (MICR)?

Answer:

❖ **MICR**

MICR (magnetic ink character recognition) is a technology used to verify the legitimacy or originality of paper documents, especially checks. Special ink, which is sensitive to magnetic fields, is used in the printing of certain characters on the original documents. Information can be encoded in the magnetic characters.

USES OF MICR

- 1 MICR IS used for security and minimize the losses caused by some types of crime.
- 2 MICR readers is used to minimize their exposure to check fraud. Corporations and government agencies also use the technology to speed up the sorting of documents.

MICR is used to verify the legitimacy or originality of paper documents, especially checks.

MICR is used extensively in banking because magnetic-ink characters are difficult to forge and are therefore ideal for marking and identifying cheques.

Q2. (a) Differentiate between printer and plotter?

Answer:

	plotter	printer
Definition	A device that draws pictures on the page with the help of commands given through a computer.	A device that brings images and texts on the page with the help of commands given through a network.
Output	Gives the output in a format that is similar to a vector graphic.	Output file data in case of a printer usually get stored as bitmap or pixels.
Benefit	Draw continuous lines	Work at fast speeds
Disadvantage	Work slower than others.	Do not draw continuous lines.
Instrument	pen	Needle or Laser

Q2. (b) Explain the printing process of a LASER Printer?

Answer:

There are seven steps process of a laser printer.

Step 1 – Processing: The computer sends the data to the printer.

Step 2 – Charging: The primary corona wire negatively charges the photoconductive drum to 600 to 1000 volts DC.

Step 3 – Exposing: The laser scan or paints the image to the drum. Anywhere the laser touches the drum causes the electrical charge to drain off.

Step 4 – Developing: negatively charge toner particles are allowed to attach to the painted area of the drum; as the negative charge has been drained off these areas.

Step 5 – Transferring: The transfer corona wire charges the paper with a positive charge from behind. The negatively charge toner jumps to the positive paper, according to the image on the drum.

A static charge eliminator or then removes any residual charge.

Step 6 – Fusing: The toner particles attached to the paper are fused or melted to the paper, usually with a heated drum.

Step 7 – Cleaning: The drum is cleaned of excessive toner and electrical charges.

Q3. (a) Explain Metropolitan Area Network (MAN) with a suitable example?

Answer:

Metropolitan Area Network (MAN):

- Designed to extend over a district, council or even an entire city.
- It may be a single network such as a cable television network, or it may be a means of connecting a number of LANs into a larger network so that resources may be shared LAN-to-LAN as well as device-to-device.

Example:

For example, a company can use a MAN to connect the LANs in all of its offices throughout a city.

Q3. (b) Define topology? Which topology would you chose to setup a local area network and why?

Answer:

Topology:

- They way computers are connected together in a network is called topology of network.
- The way a network is laid out, either physically or logically.

Star topology:

The best cabled network topology for large businesses is the star topology. This is because it is easier to control from a central console as the management software just needs to communicate with the switch to get full traffic management features. A hybrid topology is sometimes encountered as a temporary solution to connect together departments while a new unified system is being planned.

Q4. In your opinion, what are the different types of common media used for storage, access and transmission of information? Explain each type in detail?

Answer:

- Storage keeps data, information and instructions for use in the future. All computers use storage to keep the software that makes the hardware work.
- As a user you store a variety of data and information on your computer or on storage media. Storage media are the physical materials on which data, information and instructions are kept. When a user saves information or data to a storage medium he or she is storing a file, and this process is called writing.
- When the file is opened the process is called reading. Common storage media are:
- **Hard Drive:** This storage medium which looks like the one below, is a hard drive. This medium comes with the computer and is always inside the computer.
- It stores all the programs that the computer needs to work. In addition users store their data and information on the hard drive.
- **Floppy Disk:** This storage medium is considered to be a portable storage medium. You put it into the computer save your information on it, take it out, and take it with you wherever you go.
- **CD&DVD:** These types of storage media hold much more information than a floppy disk. They are also considered portable storage. These types of storage media come in different forms. This means that there are CDs and DVDs that you can only save information on but you cannot erase the information. In addition there are those that can both save information on and erase the information you have saved.
- **USB Flash Drive:** This is a storage medium that is very easy to carry around and it also holds more data than a floppy disk. As you can see from the picture below it is very small when compared with the others.

The end
