NIELIT GORAKHPUR

Course Name: O Level (2nd Sem) **Subject:** Introduction to ICT Resources
Topic: The Printer (Part 2) **Date:** 03-04-2020

THE PRINTER

2. Non-Impact Printers

A printer that prints without hammering a ribbon onto paper are called non-impact printer. Non-impact printers are thermal, chemical, electrostatic, laser beam, or inkjet technology for printing. Usually, a non-impact printer is faster than an impact printer. These printers are categorized as:

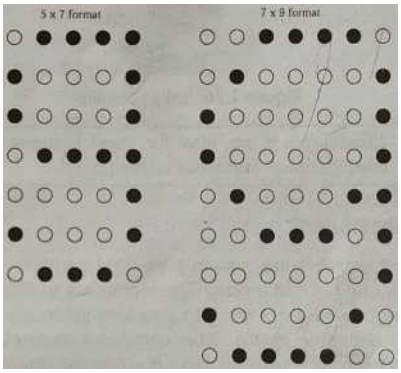
- Electromagnetic printer
- Thermal printer
- Inkjet printer
- Laser printer

Electromagnetic printer

This printer uses magnetic recording techniques. By using this technique, the required output is written on a drum surface. Then this surface is passed through magnetic powder which adheres to the charged areas. The powder is then pressed onto the paper.

Thermal printer

This type of printer uses a special heat-sensitive paper. These papers have a special heat-sensitive coating. When a spot on the paper is heated, it becomes dark. A character is printed with a matrix of dots. A print-head consists of 5 x 7 or 7 x 9 matrix of tiny heating elements. To print a character, the print-head is moved to the correct position. Then the heating elements for the desired areas are turned on. After a while, they are turned off. Then the print-head is moved to the next character position. These printers have a speed of 200 characters per second.



Inkjet printer

Inkjet printers are non-impact type printers. Inkjet printers are ideal for small business, home computers and individual computer office. Inkjet printers are more efficient than dot-matrix printers. Inkjet printers also have print-head but its print-head does not have metal pins that come out from the print-head. Instead, the print-head has many tiny nozzles that 'spray ink into the paper. Each nozzle is thinner than human hair.

Inkjet printers use a continuous stream of ink drops to print characters on paper. Droplets of ink are electrically charged after leaving a nozzle. The droplets are then guided to the proper position on the paper by electrically charged deflection plates. The print quality is

good because the character is formed by dozens of tiny ink dots. These printers produce better quality of text and graphics and are faster. Almost all inkjets offer a color option as standard, in varying degrees of resolution. Inkjet printers are capable to producing high-quality print, which almost matches the quality of a laser printer. A standard ink-jet printer has a resolution of 300 dots per inch, although newer models have even better resolution.

Laser Printer

Laser printers are non-impact type printers. They print one page at a time. These printers use laser or some other light source to produce an image on a photosensitive drum. The computer controls the laser beam to turn it on and off when the laser beam is sent back and forth across the drum. An image is produced following the raster scan principle. The laser-exposed areas attract toner (an ink powder). Thereafter, the drum transfers the toner to the paper, moving it to a fusing station where the toner is permanently fused on the paper with heat or pressure. .Next, the drum is discharged and cleaned. Now the drum is ready for processing the next page. Laser printers are quiet and produce high-quality output. These printers are expensive and require periodic maintenance. Low-speed laser printers produce 10 pages or more per minute and are used with microcomputers. High-speed laser printers producing up to 30 pages per minute are used with mini and large computers. Laser printers have become popular for voluminous printing work. They are mainly used for desktop publishing work.

Exercise:

1: What is Non-Impact Printer?

2: List printer in non-impact printer category?

3: Compare the following:

a) **Impact Printer vs. Non-Impact Printer**

b) **Dot-Matrix Printer vs. Thermal Printer**

c) **Laser Printer vs. Inkjet Printer**