**M.A. DEGREE EXAMINATION, DECEMBER – 2019**

**First Year JOURNALISM AND MASS COMMUNICATION**

**Reporting and Editing**

**ASSIGNMENT-2**

**Question 5**

Origin and growth of printing

Introduction

Printing is the process of reproducing text and images. When it comes to professional printing processes there are three main types:Offset litho printing, Digital Printing and Screen printing. Modern printing began in the fifteenth century after the invention of the printing press by Johannes Gutenberg(1398-1468). However, the history of print goes back much further in time.

**Origin and Development of Printing**

The stage-wise development of printing are given below.

**First stage: woodblock printing**

A system of printing using wooden matrices that were engraved, inked and pressed onto a sheet of paper was invented in 6th Century in Ancient China. The scope of this invention was such that, in modern Chinese historiography, printing is considered one of the four great inventions of Ancient China.

**Second stage: movable-type printing**

Movable clay type was invented in China in 9th century. The advent of movable type was one of the major landmark in the history of printing. However, it had the drawback of breaking easily. In 11th century, the inventor Wang Zhen began using much stronger wooden type and invented a complex system of revolving tables that improved the quality of printing.

**Third stage:** Modern printing began in the fifteenth century after the invention of the printing press by Johannes Gutenberg in 15th Century. On 23 February 1455, after about a year’s experimentation, **the first Gutenberg Bible was published with a print run of 180 copies.**

**Fourth stage: the rotary press**

**The first rotary press** was invented by **the United States by Richard March Hoe** in 17th century.

**Fifth stage: offset printing**

**In 1875, Robert Barclay invented the offset press for printing on metal.**Then, in 1904, Ira Washington Rubel adapted the technology for paper.

**The advantages of offset printing include** generates very sharp, clean images, High-quality printing on any type of paper, even if it has a surface that isn’t perfectly smooth.

**Sxth Stage: the linotype machine**

**In 1885, German inventor Ottmar Mergenthaler developed the linotype,** a typesetting machine. The advantage of this system was that it automatically composed lines of type. **In 1886, the linotype machine was used for the first time to print the “New York Tribune”,** a daily newspaper founded in 1841 in New York. In Italy, it was first used in 1897 to print the “Tribuna”, one of Rome’s leading dailies.

**Sixth stage: Laser printer**

**In 1971, the Xerox Corporation developed laser technology.** In a laser printer, the content to be printed is generated by electronic processes and printed directly onto the sheet of paper. With this system, it’s possible to print around 20,000 lines a minute. Record breaking. But more importantly, from this point on, **anyone could print whatever they wanted, whenever they wanted, in their office or home.**

**Seventh stage: 3D printing**

This is the present day and latest printing technology. Today, there are various technologies for 3D printing. It has taken years for 3D printing to become widely used. Because the cost of this technology was initially extremely high. But now 3D printing is used in many fields.

**Invention of Round cylinder seals and stamps (3000 BC and earlier)**

The Mesopotamians use round cylinder seals for rolling an impress of images onto clay tablets.  In other early societies in China and Egypt, small stamps are used to print on cloth.

**Invention of paper (2nd Century)**

A Chinese man named Ts’ai Lun is credited with inventing paper.

**Development of Type characters from hardened clay (11th century)**

A Chinese man named Pi-Sheng develops type characters from hardened clay, creating the first movable type. The fairly soft material hampers the success of this technology.

**Development of Type characters from cast from metal (13th century)**

Type characters cast from metal (bronze) are developed in China, Japan and Korea.

Conclusion

Gutenberg's invention of the printing press is widely thought of as the origin of mass communication—it marked Western culture's first viable method of disseminating ideas and information from a single source to a large and far-ranging audience. A closer look at the history of print, however, shows that the invention of the printing press depended on a confluence of both cultural and technological forces that had been unfolding for several centuries.

**Print culture and technology also needed to go through centuries of change**

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**Explain Process of Colour Printing**

**Introduction**

Over the last century, as technological innovation in pigments, materials, [tools, presses](https://www.sciencedirect.com/topics/engineering/presses-machine-tools) and printing methods has progressed, so too has the opportunity to print full colour images across a diversity of markets. **Colour printing is the** process of reproducing a material in [colour](https://www.britannica.com/technology/colour-separation-process) on the printed page.

**Four-Color Printing Process**

4-Color Process is the most widely used method for printing full-color images. All commercial printers use the 4-Color Process method for projects that contain multi-colored designs or photographs. This includes books, catalogs, manuals, magazines, brochures, postcards and any other printed items that contain full color images. Because of its widespread use in both offset and digital printing, 4-Color Process is much more affordable today than in years past.

As its name implies, 4 ink colors are used in 4-Color Process printing. These four colors are Cyan, Magenta, Yellow, and Black…which are known collectively as CMYK. In fact, 4-Color Process printing is frequently referred to as CMYK printing. It is also known as Four Color Printing, 4CP, Full Color Printing, or simply Process Printing.

Full-color images are created on the printing press by applying separate layers of the Cyan, Magenta, Yellow and Black inks. Thousands of colors can be reproduced by overlapping these CMYK colors in various concentrations. Applied as tiny dots on the paper (or other substrate), the four CMYK colors combine to create the visual effect we know as full color printing. Look at the photographs in a printed magazine or brochure under strong magnification and you will see the distinct CMYK dots.

**six-color printing** **process**

An emerging method of full-color printing is **six-color process printing** (for example, [Pantone](https://en.wikipedia.org/wiki/Pantone)'s [Hexachrome](https://en.wikipedia.org/wiki/Hexachrome) system) which adds orange and green to the traditional CMYK inks for a larger and more vibrant [gamut](https://en.wikipedia.org/wiki/Gamut), or color range. However, such alternate color systems still rely on color separation, halftoning and lithography to produce printed images.

### 3D printing

Colour printing technology is developing rapidly; in less than 40 years, it moved from dot matrix printers with an ink-soaked cloth ribbon to 3D printers used to make three-dimensional colour objects.

However, the technology has not been capable or cost-effective enough for most end-product or high-volume commercial manufacturing. Based on expectations these shortcomings are about to change. An emerging class of mid-level 3-D printers is starting to offer many high-end system features in a desktop form factor at lower price points. There are several emerging uses of [3D printing](https://www.sciencedirect.com/topics/materials-science/three-dimensional-printing) such as: automotive and industrial manufacturing; aerospace; pharma and healthcare; retail; sports.

**Conclusion**

**The use of color in print increases readership and information retention.**
Studies revealed that the use of color increased readership. Also, there will be increase in the retention of material when full color was used instead of black and white.

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