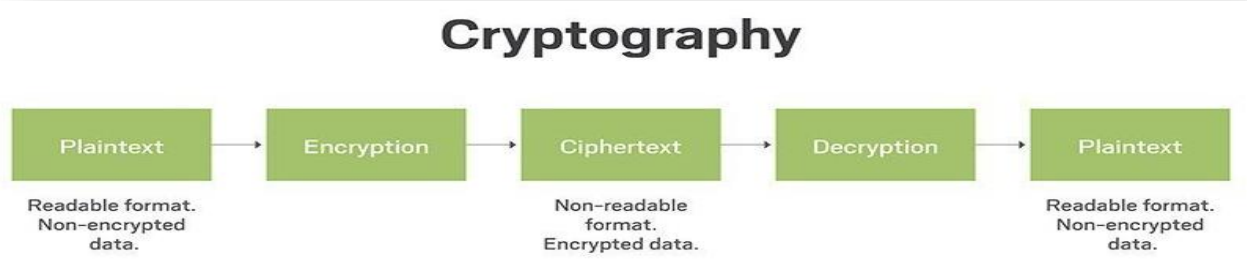
Course Name : O Level(B4-Ist sem.)
Topic : Cryptography ,RPA and 3D Printing/ Additive Manufacturing

Subject : ITT&NB
Date : 11-06-20

Cryptography

The term cryptography is a Greek word which means "**secret writing**". Cryptography involves the process of encryption and decryption. Cryptography is the art of secret writing. Cryptography enables to send information between participants in a way that prevents others from reading it.



3D Printing/ Additive Manufacturing

3D printing is a processes in which material is joined or solidified under computer control to create a three-dimensional object, with material being added together (such as liquid molecules of plastic like material or powder grains being mixed together), typically layer by layer. Initially, 3D printing was a rapid prototyping technique mainly used for production of functional prototype of any design/ model/ object. Today, repeatability and material range have increased to the point that 3D printing is considered as an industrial production technology, with the name of additive manufacturing. 3D printed objects can have a very complex shape or geometry and are always produced starting from a digital 3D model or a CAD file. Even artificial limbs are also been made using 3D Printing giving a revolution in medical science also.

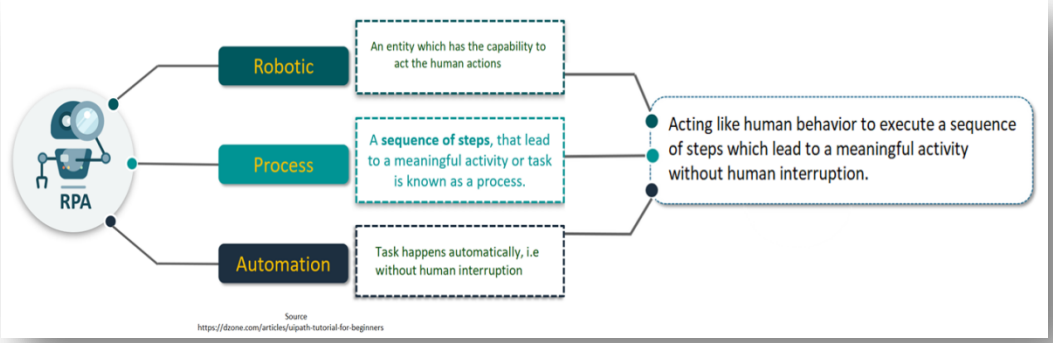
Characteristics of 3D printing:

- Objects are created by adding or depositing layers of material, not subtracting or cutting out pieces from a block of material.
- Because objects are created by adding layers, the computer file with details about model must be converted into slices the printer will create layer by layer.

- Printing a three-dimensional object can take hours or days to complete, depending on the complexity and size of the object.
- Cost is based on materials used, among other factors.

Robotics Process Automation (RPA)

Robotics Process Automation (RPA) can be used to automate workflow, infrastructure and back-end office process which are mainly person dependent. The RPA is a software program which runs on an end user's pc, laptop or mobile device. The main goal of Robotics process automation process is to replace repetitive and boring clerical task performed by any person, with a virtual work environment. Emergence of AI has given a boom to RPA.



Application of RPA:

- **Healthcare: -** For Patient registration and Billing.
- **Insurance: -** For Claims processing & clearance and premium Information.
- **Travel & Logistic: -** For Ticket booking, Passenger Details and Accounting.
- **Government: -** For Change of Address and License Renewal.
- **Banking and Financial Services: -** For Cards activation and Frauds claims.

Exercise:

1. Write short notes on 3D Printing/ Additive Manufacturin and Robotics Process Automation (RPA).