**The Types of Microscope:-**

1- Dissecting Microscope: This microscope is used to examine small and plants and their parts, which we cannot see clearly with the naked eye, and can to see things in three dimensions 3D , and it's magnification ranges from 6-50 time.

2-Inverted microscope: It this microscope can you enabled to watch and follow the developments and changes that occur in the cell while it carries out it's vital activity, such as division, nutrition, and growth.

3-Digital Microscope: It is a type of compound microscope with camera added to it (regular photos+ video recording), and can be displayed on the television or computer.

4- Fluorescence Microscope: It is one of the modern light microscope that rely on phosphorescent or fluorescent dyes, and it's of great importance in the study of cell protein and the chromosome.

5- Ultra-violet Microscope:- This microscope is used when using fluorescent dyes that have the ability to absorb ultraviolet rays, giving the sample two or three times greater magnification and clarity, and is used to measure the absorbance of sample to UV rays.

6- Electron Microscope: It is used to obtain very precise and useful details of the examined sample, compared with the light microscope, and the give a high magnification power of up to move than million time, it is used to study the internal contents of a living cell.

7- Dark filed Microscope :- A type of light microscope in which the light is in the form of a ring around the object to be seen and live or non-living sample can be used.

8-Phase contrast microscope:- This microscope helps a lot in studying the internal structures of the unstained living cell as it has the ability to increase the contrast between the transparent molecules inside the living cell so that they appear either bright or opaque depending on the density.

9-Polarizing microscope:- It is the microscope that is mainly used to study geological sample and can be used in medicine and biology, as it work to polarizing light to study the sample.

**The shape of the cell**

The cell :- is the structural and function unit that contains the basic molecules of life in all living organisms.

 Cells are classified according to their external appearance into several forms, including:-

1-Squamous cells:- These are flat cells that resemble fish scales and cover the outer layer of the skin and line the internal cavities of the body, such as epithelal cell in the mouth.

2- Cuboidal cells:- These are cells that appear square in cross-section and have a large, spherical, centrally located nucleus that rests on the basement membrane, as in the cells lining the urinary tubules in the kidney.

3-Columnar cells:- These have an elongated nucleus near to the base, the may contain microvilli, such as the cells lining the intestines, or cilia, as in the cells lining the fallopian tubes and uterus.

4- Spheroid cells:- As in adipose cell, which contain a large fat droplet that occupies most of the cytoplasm, pushing the nucleus to the periphery of the cell.

5- Discoid cells:- such as human red blood cells

6- Stellate cell:- such as multipolar neurons.

7-Irregular shape cells:- such as amoeba and macrophage.

8- Fusiform cells:- thick in the middle and tapered at the edges, such as smooth muscle cells.

