Hello students.

I am Celly Coutinho from Government College ,QUEPEM,GOA.

Today we shall take up unit 2 from cell biology.And will be dealing with the cell theory.

What we're going to do the history of cell theory in brief and also the cell theory.

What is the cell theory? A little of its history and the applications of this theory.

It was Robert Hooke in 1665,who was the first scientist who observed a slice of CORK using a microscope.And he discovered hollow cavities,like small little cells.He then coined the term “cell” and he wrote it in his book,“Micrographia” This was his microscope and this is the cork that he took section of an he saw the dead cells like compartments or small cells.

Later,Antonio Van Leeuwenhoek, used single lens microscope and he was the first person to see a living cell of bacteria from dental scratchings.

Later in 1838,German botanist Matthias Jacob Sheldon,studied microscopic plant structures of different plants.Species he observed the plant parts,and he observed that they are all composed of cells.

Every plant species is made up of cell.This is what he came to, a conclusion that it is a basic unit of the plant.In 1839 Theodore,a German zoologist applied this thesis of cells to animals.

And found that all animals.Are also made up of cells.So, Matias and Theodore.

They both postulated that the Cell is a basic unit of structure and function of life.This simple basic generalized.Finally, the theory or called a cell theory.All living organisms are made up of cells.

This formed the first cell theory.Later, showed that plant cells formed from different divisions from divisions of pre existing cells.

Then in 1855,pathologists Rudolph V. confirmed Naegelli's principle and he stated it in Latin that every

cell is from a cell. That is only cellular e cellular. So the cell theory states that.

All living organisms are composed of one or more cells.

Cells arise from pre existing Cells.The cell is a smallest basic unit of structure and organization of life.

All metabolic reactions in organisms take place in cells.So when we have pre existing cells they form new Cells. Now,Why is this cell theory?It is used to understand how life exists.

Now this cell theory can be applied to all living organisms.But it is applicable only to true Cells.

Cells which have a set of genes.They have the plasma membrane.They have their own metabolic machinery for life activities, which some organisms do not have,so some organisms do not fit in the purview of the Cell theory.Let us take the virus.We have the bacteriophage here.

We see it doesn't have a plasma membrane.It doesn't have cytoplasm.

And it doesn't have its own metabolism.

Viruses, if you see minutely it consists of DNA and it has a covering of protein.It's non cellular, not made up of cells,no chromosomes. Outside the host,they are nonliving.

They reproduce only inside the host cell.So if you see the different types of viruses here, they don't have their own machinery.So we cannot say they are true living cells.

They are dependent on the host,so they are actually parasites.We also have fungus Rhizopus.

And we have Vaucheria. They do not fit into this cell theory too.Their bodies contain a mass of undivided protoplasm, and many nuclei scattered which lack cell organization.

So the cell theory is not applicable to these organisms also.

During this session, we have actually realized that it

was Matthias Sheldon and Theodore Schwann who proposed the cell theory.

Which states that all organisms are composed of one or more cells.

Cells arise from pre existing cells.Cell is a basic unit of cell structure,an organization in an Organism.

And all metabolic reactions in organisms take place in cells.

We have some references here which can be used by you.

And also some web references.Which you can refer to.

Thank you.