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**COURSE- BCH 202**

**MATRIC NO- 18/MHS06/004**

**7. Review vitamins and different form, write on metabolism of one known vitamin to its active form**

Vitamins are organic compounds that are essential in very small amounts for supporting normal physiologic function. We need vitamins in our diet, because our bodies can't synthesize them quickly enough to meet our daily needs.

Forms

Water soluble vitamins

Fat soluble vitamins

Metabolism of vitamin b2

(vitamin B2) is an important part of the enzyme cofactors FAD (flavin-adenine dinucleotide) and FMN (flavin mononucleotide). The name "riboflavin" actually comes from "ribose" and "flavin". Like the other B vitamins, riboflavin is needed for the breaking down and processing of ketone bodies, lipids, carbohydrates, and proteins. Riboflavin is found in many different foods, such as meats and vegetables. As the digestion process occurs, many different flavoproteins that come from food are broken down and riboflavin is reabsorbed. The reverse reaction is mediated by acid phosphatase 6. FMN can be turned into to FAD via FAD synthetase, while the reverse reaction is mediated by nucleotide pyrophosphatase. FAD and FMN are essential hydrogen carriers and are involved in over 100 redox reactions that take part in energy metabolism.

**8.glycolipids, its various form and structure**

**Glycolipids** are lipids with a carbohydrate attached by a glycosidic (covalent) bond. Their role is to maintain the stability of the cell membrane and to facilitate cellular recognition, which is crucial to the immune response and in the connections that allow cells to connect to one another to form tissues.

Forms

Glyceroglycolipids-

Glycosphingolipids

Gangliosides

Globosides

Glycophosphosphingolipids

Glycophosphatidylinositols

### 9.Detail write up on cell and functions of important cell organelles

The **cell** from Latin *cella*, meaning "small room" is the basic structural, functional, and biological unit of all known organisms. A cell is the smallest unit of life. Cells are often called the "building blocks of life". The study of cells is called cell biology, cellular biology, or cytology.

Cells consist of cytoplasm enclosed within a membrane, which contains many bio molecules such as proteins and nucleic acids. Most plant and animal cells are only visible under a microscope, with dimensions between 1 and 100 micrometres Organisms can be classified as unicellular (consisting of a single cell such as bacteria) or multicellular(including plants and animals). Most unicellular organisms are classed as microorganisms.

The number of cells in plants and animals varies from species to species; it has been estimated that humans contain somewhere around 40 trillion ( $4 \times 10^{13}$ ) cells The human brain accounts for around 80 billion of these cells.

Cell organelles	Function
Cell Membrane/ Plasma Membrane	Encloses the contents of the cell.  Provides shape: animal cell.  Allows transport: by Diffusion and Osmosis.
Cell Wall	Protection  Gives shape and turgidity.

Cytoplasm	Contains enzymes responsible for all the metabolic activity taking place inside the cell
Nucleus	Controls the activity of the cell.
(Director/ Brain of the Cell)	Starts cell division.  It has the chromosomes or DNA which controls the hereditary characters
Golgi Bodies	Modification, Packaging, and transport of materials  Synthesis of lysosomes, plasma membrane
Endoplasmic Reticulum	Forms the skeletal framework of the cell.  Transport of materials from one cell to other.
Vacuole	Store cell sap which may be liquid or solid food, toxic byproduct.
Ribosomes	Synthesis of Proteins
Plastids	Chloroplast – Perform Photosynthesis – Helps in

the release of oxygen

Chromoplast –  
impart colour to flowers  
which help in pollination