

①

Name: Farman ullah Khan  
ID : 15807

Q(1)

Ans: Metabolism:

Is the term that use to describe all chemical reaction involved in maintaining the living state of the cells and the organism.

Types:

Catabolic:

Is the set of metabolic pathways that breakdown molecules into smaller unit releasing the energy contain in the chemical bonds. These energy release (conversion) are not 100 percent efficient. The amount of energy released is less than the total amount contain in the molecules.

(2)

(ii) Anabolism:-

Is the set of metabolic pathways that construct molecules from smaller units. These reactions require energy. Anabolic reactions combine monosaccharides to form polysaccharide, fatty acids to form triglyceride, amino acids to form proteins.

③

Q. (2)

Ans = Macromolecules:

- Macro molecules as known as organic compounds
- Built around the element Carbon
  - Larger molecules are called macromolecules "(Macro-mean large)"  
Polymer,
  - Made by smaller molecules bounding together called monomers.

Macro-molecules found in  
Plasmalemma:

Carbohydrates:

⇒ Oligosaccharides,

4

Lipids:

⇒ Phospholipid,

⇒ Cholesterol,

Proteins:

⇒ Transport proteins,

⇒ Receptor proteins,

⇒ Recognition proteins.

(5)

Q (3)

Ans = Formation of Urea:

Urea formation take place in the liver and all the enzymes involved in urea formation are isolated from liver tissues.

Steps involved:

- (1) Synthesis of Carbonyl phosphate.
- (2) Synthesis of Citruline.
- (3) Synthesis of argininosuccinate.
- (4) Cleavage of argininosuccinate.

Enzymes involved in Urea:

- (1) Carbonyl Synthetase.
- (2) Ornithine transcarbamylase.
- (3) Arginino succinate.
- (4) Arginase.

(6)

Process:

Synthesis of Carbamyl phosphate:

In the first step ammonium ion,  $\text{CO}_2$  and phosphate of ATP combine together to form carbamyl phosphate in the presence of enzymes.

Synthesis of Citruline:

In the second step carbamyl react with ornithine in the presence of catalyst called ornithine trans.

Synthesis of Argininosuccinate:

In the 3<sup>rd</sup> step the citruline form in the 2<sup>nd</sup> step, now react with amino group of aspartate to form argininosuccinate. This process occur in the presence of enzymes.

P.T.O

## Sy Cleavage of Argininosuccinate:

In the 4<sup>th</sup> step the cleavage of argininosuccinate occur in the presence of an enzyme called Argininosuccinate lyase which results in the formation of Arginine and fumarate.

Q(4)

Ans: Function of Saccharides:

@ Source of energy, Source of C.H.O  
Sweetener, Ribose, Sugar industrial  
use.

Source of energy Carbohydrates  
act is primary source of  
energy. C, H, O. Carbohydrat also  
act as source of C.H.O for  
the synthesis macromolecules.

Sweetener, some sugar are  
sweet in test is they  
provide sweetness to foods.  
Ribose sugar, if the essential  
component in genetic material

(R.N.A, D.N.A).

Industrial use, some Carbohy-  
drates are use is cosmet-  
erial in many industry.

e.g, Cellulose, used in paper  
industry.



⑧ ⑨

Q(5)

Ans: Acidic Amino acid:

Acidic amino acids have acidic side chains at neutral PH while basic amino acids have basic side chains at neutral PH. Aspartic and glutamic acid are acidic amino acids. lysine, arginine and histidine are basic amino acids.

Aliphatic amino acids:

Aliphatic amino acids are the acids of nonaromatic hydrocarbon. e.g. of hydrocarbons, butyric acid, propionic acid, and acetic acid.

In organic chemistry, hydrocarbon are divided into two classes aromatic compound and aliphatic compound.

P.T.O

(10)

Also known as non aromatic hydrocarbon with conjugated pi-system that obey Hückel's rule are instead considered to be aromatic.