Chapter five

Enzyme

Q1/ Define:

Enzymes, Active site, Isoenzymes, Zymogene, Enzyme activity, katal, maximum velocity, Km, Inhibitors, Competitive inhibitions, Non competitive inhibition, Uncompetitive inhibition

Q/ Full the blanks:

1- All enzymes are proteins with the exception of a small group of RNA molecules, called ---------

2- Enzymes are produced by ----------and are present in very ---------- in various cells.

3- The substance (molecule) upon which an enzyme acts is called the ------ and Enzyme will convert the Substrate into ---------- then to -------- .

4- When the enzyme is a conjugated protein, the protein part is called ------ and the non protein part is called the ----------. The complete structure is called ----------.

5- Some enzymes have only one polypeptide chain in their structure is called -------- enzyme, e.g. ------.

6- Many enzymes have more than one polypeptide chains in each molecule are called ------ enzymes. Like -------- have --------- chains.

7- The six major classes of enzymes are --------,----------,---------,---------,---------, and ----------

8- Creatine kinase have -------- isoenzymes and Lactate dehydrogenase have ---------- isoenzymes

9- The reason of secretion of the enzyme in proenzyme (inactive form) are------, and ----

10- Factors affecting the enzyme activity are ----,-----,------,-----, and---------

11- Inhibitors are chemical compounds that bind to the enzyme which ------- the activity of an enzyme. These compounds include ----------,---------, and --------

12- The effect competitive inhibition can be removed by ----------.

13- In competitive inhibition, Km is ----- , Vmax is ------, and enzyme affinity of the substrate is -----.

14- In non-competitive inhibition, Km is ------- and Vmax is --------.

15- In uncompetitive inhibition, Km is ------- and Vmax is -------.

Q/ What are the difference between:

1- Intracellular enzymes and Extracellular enzymes.

2- Lock and key models and Induced fit model

3- Absolute specificity and Group specificity

4- Competitive inhibitions and Non competitive inhibition,

5- Competitive inhibitions and Uncompetitive inhibition

6- Non Competitive inhibitions and uncompetitive inhibition

Q/ Give an example on:

Enzymes, Oxido redutase, Transferase, Hydrolase, Lyases, Isomerase, Ligases, Isoenzymes, Zymogene, Inhibitors, Competitive inhibitions, Non-competitive inhibition, Uncompetitive inhibition, Intracellular enzymes, Extracellular enzymes.

Q/ Write four properties of enzymes

Q/ Define the Enzyme specificity? How many types of specificity? Explain.

Q/ What is the effect of Temperature on the rate of reaction which are catalyzed by enzyme

Q/ What is the effect of pH on the rate of reaction which are catalyzed by enzyme

Q/ What is the effect of Enzyme concentration on the rate of reaction which are catalyzed by enzyme

Q/ What is the effect of Substrate concentration on the rate of reaction which are catalyzed by enzyme

Q/ Write the E.C of each of these enzymes:

Lactate dehydrogenase, hexokinase, aminotransferase, α- amylase, pepsin, trypsin, pyruvate decarboxylase, phosphoglycerate mutase, glucose-6-phosphate mutase, isomerase, epimerase, glutamine synthetase, peptide synthetase, and pyruvate carboxylase, urase, catalase, glutathione peroxidase, glutathione reductase, methylmalonyl CoA mutase, phosphrylase, alanine racemase, Fumarase.