

Answer all questions

Time: 02 hrs



1. (a). Explain "Aerobic oxidation of D-Glucose yield more energy than anaerobic oxidation."
(b). Briefly discuss the regulatory mechanism of the following:
 - (i). glycolytic sequence
 - (ii). Fatty acid biosynthesis

2. (a). Outline the catabolic pathway whereby the Palmitic acid ($C_{15}H_{31}COOH$) is converted to acetyl coenzyme A.
(b). What would be the total number of ATP molecules generated from one molecule of palmitic acid if all the acetyl coenzyme A generated was oxidized via the tricarboxylic acid (TCA) cycle (explain all your calculations).
(c). Briefly explain how the oxidation of unsaturated fatty acids differ from the oxidation of saturated fatty acids.

3. (a). Outline how the Pentose Phosphate Pathway can supply ribose-5-phosphate for the synthesis of RNA.
(b). Giving examples, describe the synthesis of sugars from fatty acids.

4. Write notes on the followings:
 - (a). Enzyme inhibitors in foods of plant origin?
 - (b). Transamination reactions in the biosynthesis of amino acids.