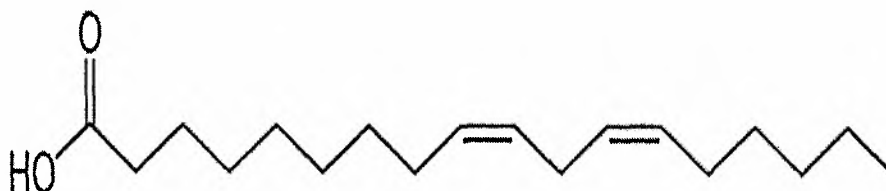


Part A: Answer Any Six: 6 X 8=48

1. How Isozymes give advantages in metabolism? Explain with examples. What are the mechanisms of action of cyanide toxicity? Consider the catabolism of glucose in yeast under aerobic conditions. What are the enzymes catalyze decarboxylation reactions? What enzymes catalyze decarboxylation reactions under anaerobic conditions? 3+1+3+1=8
2. What is the mechanism of insulin release in response to blood glucose? How blood glucose levels regulate the activity of Glycogen phosphorylase? What are the different types of diabetes? Explain insulin resistance due to obesity? What is the source and function of Leptin? 2+1+1+2+2=8
3. What are the functions of HGPRT and APRT? If these enzymes are mutated (inactive) what will be the clinical consequence? What is the role of folate in nucleotide biosynthesis? Explain the mode of action of fluorouracil and methotrexate as anti cancer drug. Discuss the mode of action of Allopurinol? 2+1+1+2+2=8
4. Explain the metabolic alteration and pathology in human body due to excess alcohol consumption. Discuss the energy metabolism of liver, brain, muscle and adipose tissue during fasting state. 4+4=8
5. What are lipoproteins explain with example? How Lipoproteins regulates lipid transport in the body? How lipoprotein transport related to heart disease? Explain what happens in Familial hypercholesterolemia? What is reverse cholesterol transport? 1+2+2+2+1=8
6. What is glyceroneogenesis? In which tissue this glyceroneogenesis is predominant? What is triacyl glycerol cycle? Explain how glucocorticoid regulates Triacyl glycerol synthesis? What is the cause of Refsum disease? What is the cause and effects of Methylmalonic academia? 1+1+2+1+1+2=8
7. How water splitting occurs in Photosystem II explain? What are the roles of Mitochondria in urea formation? What are the relations between urea cycle and TCA cycle? Describe the role of phenylbutyrate/Benzoate in treating urea cycle disorder. 2+2+2+2=8
8. Calculate the net number of moles of energy-rich phosphate (ATP equivalents) that should be produced by the complete aerobic oxidation of the following compound? With explanation. 8



Part B: Answer both the question:

2X1=2

9. What is the cause of Niemann–Pick diseases? 1
10. Explain what disease will occur due to lack of Hexosaminidase? 1

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