

Question Paper

Exam Date & Time: 04-May-2019 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTER FOR APPLIED SCIENCES IV SEMESTER B.Sc. (Applied Sciences) in ENGG. END SEMESTER THEORY EXAMINATION APRIL/MAY 2019 BIO-CHEMISTRY [IBT 231]

Marks: 100

Duration: 180 mins.

Answer 5 out of 8 questions.

Missing data, if any, may be suitably assumed

- 1) Explain the structure of fructose and chemical properties monosaccharides. (12)
Add note on biomedical importance
 - A)
 - B) Explain the structure and chemical properties of amino acids. (8)
- 2) Explain the structure and functions of alpha helices and beta strands. (12)
Describe the importance of proteins
 - A)
 - B) Explain the mechanism of enzyme activity. Add a note on competitive inhibition. (8)
- 3) Explain the breakdown of glucose and its energetics. Comment on oligosaccharides (12)
 - A)
 - B) Explain the role of carnitine and peroxisomes in beta oxidation. (8)
- 4) Explain the shuttling of acetyl CoA between cytoplasm to mitochondria and their significance in metabolism (12)
 - A)
 - B) Explain the fate of propionyl CoA and its utility. (8)
- 5) Explain the structure and functions of eicosanoids. Comment on biological importance. (12)
 - A)
 - B) Explain the process of omega oxidation with its location. (8)
- 6) Explain the process of metabolism of palmitic acid and its energetics. (12)
 - A)
 - B) Explain the significance and importance of genetic code. (8)
- 7) (12)

- A) Explain the process of oxidative phosphorylation and energy conversion.
- B) Describe the role of mitochondria, peroxisomes and ER in fatty acid metabolism (8)
- 8) Give an account of conformation of proteins and nucleic acids (12)
- A)
- B) Elucidate the relationship between pI and pH . Write the significance of sidechains in the reactivity. (8)

-----End-----