

2023

FOOD AND NUTRITION — HONOURS

Paper : CC-10

(Nutritional Biochemistry - I)

Full Marks : 50

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

1. Answer *any five* from the following : 2×5
  - (a) What is specificity of an enzyme? Give example.
  - (b) What do you mean by HDL cholesterol?
  - (c) What do you mean by allosteric inhibition of enzyme activity?
  - (d) What do you mean by prosthetic group? Give example.
  - (e) What is oxidative phosphorylation? Give example.
  - (f) What do you mean by  $V_{max}$  in an enzyme catalysed reaction?
  - (g) What are zymogens? Give example.
  
2. Answer *any two* from the following :
  - (a) Briefly discuss about the energy generating steps in Krebs cycle. What is the net gain of energy in Krebs cycle? 4+1
  - (b) Discuss in detail the functions of coenzymes derived from Vitamin B<sub>2</sub>. 5
  - (c) What do you mean by feedback inhibition? Briefly explain with suitable examples. 5
  - (d) Define substrate level phosphorylation. Write the reactions where substrate level phosphorylation takes place in Glucose Metabolism. 2+3
  
3. Answer *any three* from the following :
  - (a) Discuss Michaelis Menten equation and explain all the variables and constants involved. What is the significance of  $K_m$ ? What are isozymes? 6+2+2
  - (b) Write short notes on : 2½×4
    - (i) Coenzyme of Vitamin B<sub>1</sub>
    - (ii) Alpha Keto Glutarate Dehydrogenase Complex
    - (iii) Significance of PP pathway
    - (iv) Fatty acid synthase complex.

Please Turn Over

- (c) Briefly discuss about  $\beta$ -oxidation of fatty acids. Discuss the activation of fatty acid in brief. 6+4
  - (d) Gluconeogenesis is not the reverse of Glycolysis. Explain in detail. Under what circumstances and where does gluconeogenesis take place? 6+2+2
  - (e) Explain in brief the synthesis and utilization of ketone bodies. What do you mean by fatty liver? Explain the clinical significance of cholesterol. 5+2+3
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