

**Applied Biochemistry & Molecular Biology
(2010 Scheme)**

Time: 3 Hours

Total Marks: 100

- Answer all Questions.
- Draw diagrams wherever necessary.

Essay

(3x10=30)

1. List out all the steps involved in DNA synthesis and describe replication bubble.
2. List out the components of ETC. Describe the flow of electrons and explain the oxidative phosphorylation.
3. Explain in detail HMP pathway and mention its significance.

Short notes

(14x5=70)

4. Isoenzymes.
5. Mention the synthesis and significance of adrenaline.
6. Define enzyme and classify with examples.
7. Describe the malate shuttle and add a note on its significance.
8. Explain PCR with its applications.
9. Describe the formation of ketone bodies.
10. Mention the other names of TCA cycle. Explain the energetics and amphibolic role of the cycle.
11. Describe the reciprocal regulation of glycogenesis and glycogenolysis.
12. Explain the structure of DNA.
13. Explain the glucose tolerance test .
14. Describe the biosynthesis of any one major pyrimidine nucleotide.
15. What is mutation and describe the various types of mutation.
16. Explain the biosynthesis of phospholipids and its significance.
17. Mention the basic structure of amino acids. Classify amino acids by its chemistry and distinguish between essential and non-essential amino acids.