



## List of Topics Covered

### **UNIT – I BIOINFORMATICS**

**9**

Scope of Bioinformatics-Elementary commands and Protocols, ftp, telnet, http.Primer on information theory.

### **UNIT – II SEQUENCING ALIGNMENT AND DYNAMIC PROGRAMMING**

**9**

Introduction-Strings-Edit distance two strings-string similarity local alignment gaps-parametric sequence alignments-suboptimal alignments-multiple alignment-common multiple alignment methods.

### **UNIT – III SEQUENCE DATABASE AND THEIR USE**

**9**

Introduction to databases-database search-Algorithms issues in database search-sequence database searchFASTA-BLAST-Amino acid substitution matrices PAM and BLOSSUM.

### **UNIT – IV EVOLUTIONARY TREES AND PHYLOGENY**

**9**

Ultrasonic trees-parsimony-Ultrametric problem-perfect phylogeny-phylogenetic alignment-connection between multiple alignment and tree construction.

### **UNIT – V SPECIAL TOPICS IN BIOINFORMATICS**

**9**

DNA Mapping and sequencing-Map alignment-Large scale sequencing and alignment-Shotgun-DNA sequencing-Sequence assembly-Gene predictions-Molecular predictions with DNA strings.