Bioinformatics: Concepts and Applications

The Department of Zoology, in collaboration with the IQAC, organized a three-day seminar on “Bioinformatics: Concepts and Applications”, focusing on the growing role of computational approaches in modern biological research. The seminar introduced participants to the fundamentals of bioinformatics, biological databases, data sources, sequencing technologies and computational tools. Various resources including NCBI, GenBank, RefSeq, UniProt, PDB, GEO and GeneCards were discussed along with their applications in biological data analysis. The sessions covered sequence alignment, dot-matrix analysis, BLAST, substitution matrices, multiple sequence alignment and phylogenetic analysis. Practical demonstrations provided hands-on exposure to database searching, sequence comparison and analysis using biologically relevant examples. The seminar also highlighted applications of bioinformatics in genomics, gene-expression analysis, molecular biology and biomedical research. The programme enriched participants’ understanding of emerging computational approaches and their practical applications in contemporary biological research.