Subject Code : P8GT7

CORE COURSE VII – RECOMBINANT DNA TECHNOLOGY

Unit I

Core techniques in gene manipulation. Cutting and joining of DNA, introduction of DNA into cells

Unit II

Cloning strategies, construction of genomic libraries and rDNA Libraries, Probe construction, recombinant selection and screening, Molecular cloning.

Unit III

Analysis of expression, Analysis of recombinant DNA, sequencing, mutagenesis, altered expresswions and engineering genes, Site-directed mutagenesis

Unit IV

DNA amplification using polymerase chain reaction (PCR), key concepts, Analysis of amplified products, Applications of PCR: Ligase chain reaction, RELF, Rapp, DNA Finger printing

Unit V

Expressions systems and their applications, E, coli., Bacillus streptomyces, Yeast, Baculovirus and animal cells as cloning hosts. Yease shuttle vectors, cosmid, Production of antibodies and Vaccines

Reference Books:

1. Principles of gene manipulation by RN old & S.B. Primrose (1996) Blackwell Scientific Publications
2. DNA cloning I & II by DM Glover & BD. Hames (1995) IRL, Press
3. PCR strategies by MA. Innis, DH, Gelfand & JJ Sninskey (((%), Academic press
4. Diagnostic Molecular Microbiology by D.H. Persing, K T.F. Smith, F.c. Teower and T.J. While. ASM Press 1993
5. Recombinant DNA by Watson JD, Gilman M. Witkowski, Zoller M. (1992), Scientific American Books
6. Recombinant gene expression protocols by Tvan RS (1997) Humana Press.