

CORE COURSE VIII - DEVELOPMENTAL BIOLOGY

UNIT I:

Chemical nature and macromolecular nature of cells. Protein structure and function. Membrane architecture subcellular organelles – mitochondria, chloroplast cell division – mitosis and meiosis.

UNIT II:

Chromosome architecture – modern concepts of Gene, prokaryotes and eukaryotes. DNA transfection; Replication, Repair, recombination, restriction and modification- Chromosomal abnormalities – Genetic disorders.

UNIT III:

Gene expression; Transcriptions and its expression in prokaryotes, translation and its regulation in prokaryotes transcriptional and Translational regulation in prokaryotes. Post transcriptional modification in Eukaryotes.

UNIT IV:

Membrane architecture and assembly, membrane associated process like transport and energy transduction including ATP synthesis and photosynthesis.

UNIT V:

Specialised cells and their architecture. Specialised cell events like cell – cell signalling, Regulation in Eukaryotic cell cycle.