MOLECULAR BIOLOGY

I. Gene concept

1. classical concept of gene

Gene – Genes are the physical and functional units of heredity capable of expressing themselves by generating RNAs and proteins through template activity, genetic transcription and translation.

- the sum total of all genes of a cell is known as genome.

→ General features.

→ Genes are independent, self duplicating, hereditary units which determine the physical features, physiological properties and behavioural aspects of organisms.

→ Genes are the ultimate units of function, and they act and express themselves through the production of proteins.

→ Genes are fundamental units of recombination, mutation and variation.

→ Genes are the units of hereditary transmission, and they can be transmitted from one generation to the next, without considerable changes in them.

→ Genes have linear and non-overlapping arrangement in the specific points or loci of chromosomes, just as beads on a string

→ A single chromosome contain hundreds of thousands of genes

→ A single gene may exist in 2 or more alternative forms, known as alleles, which grow occur in pairs. Most genes have 2 alleles. dominant and recessive. Some may have multiple alleles.