

Semester-5

MTC-9

Topic — Mendelian genetics:

- Mendelian genetics are the branch of genetics that explain how traits are inherited from parents to offspring.
- He is called father of genetics.
- Mendelian genetics is the study of inheritance of traits based on Mendel's law, which explain how genes are passed from parents to offspring.

Mendel's experiments

Why Mendel chose pea plant?

- short life cycle
- easily distinguishable traits
- self pollination and cross pollination possible
- produce many offspring

Seven contrasting traits studied by Mendel

Characters

Seed shape

Seed color

Flower color

pod shape

pod color

Dominant traits

Round

Yellow

purple

inflated

Green

Expt. No.

Flower position
Stem length

Apical
Tall

Some important Terminologies: -

(1) Genes - Unit of heredity that controls a trait.
eg - Gene for height

(2) Alleles - Alternative form of a gene
eg -
T = Tall
t = dwarf

(3) Dominant allele - Expresses its effects even in heterozygous condition.
eg - T (tall)

(4) Recessive allele - Expressed only when present in homozygous condition.
eg - t dwarf

(5) Homozygous - Both alleles same
eg - TT tall
tt dwarf

(6) Heterozygous - Both alleles different
eg - Tt (tall)

Teacher's Signature: _____

(9) Genotypes → Genetic Constitution

eg — TT, Tt, tt

(10) phenotypes — physical appearance

eg — tall and dwarf

(11) Hybrids — offspring of genetically
different parents

eg — Tt .