



# BIOLOGY

## NCERT - NCERT BIOLOGY(HINGLISH)

### PRINCIPLES OF INHERITANCE AND VARIATION

#### Principles Of Inheritance And Variation

1. Mention the advantages of selecting pea plant for experiment by Mendel.



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**2. Differentiate between the following:**

(a) Dominance and Recessive

(b) Homozygous and Heterozygous

(c) Monohybrid and Dihybrid.



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**3. A diploid organism is heterozygous for 4 loci, how many types of gametes can be**

produced?



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4. Explain the Law of Dominance using a monohybrid cross.



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5. Define and design a test – cross?



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6. Using a Punnett square, work out the distribution of phenotypic features in the first filial generation after a cross between a homozygous female and a heterozygous male for a single locus.



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7. When a cross is made between tall plants with yellow seeds ( $TtYy$ ) and tall plant with green seed ( $TtYy$ ), what proportions of

phenotype in the offspring could be expected to be

- (a) Tall and green.
- (b) Dwarf and green.



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8. Two heterozygous parents are crossed. If the two loci are linked what would be the distribution of phenotypic features in  $F_1$  generation for a dihybrid cross?



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**9.** Briefly mention the contribution of T.H. Morgan in genetics.



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**10.** What is pedigree analysis? Suggest how such an analysis, can be useful.



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**11.** How is sex determined in human beings?



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**12.** A child has blood group O. If the father has blood group A and mother blood group B, work out the genotypes of the parents and the possible genotypes of the other offsprings.



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**13.** Explain the following terms with example

(a) Co-dominance

(b) Incomplete dominance



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**14.** What is point mutation? Give one example.



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**15.** Who had proposed the chromosomal theory of inheritance?



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**16.** Mention any two autosomal genetic disorders with their symptoms



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