

## UNIT-VI: GENETICS

**VI. GENETICS****(1 x 4) + (1 x 8) = 12 Marks****ROOT POINTS**

1. **Genetics** is a branch of biology that deals with the study of heredity and variations.
2. **Heredity** is the study of transmission of characters from parents to offsprings.
3. **Variation** may be defined as the differences in characteristics shown by the individuals or a species and also by the offsprings or siblings of the same parents.
4. **Gene** is the inherited factor that determine the biological character of an organism.
5. A pair of contrasting characters in a Gene is called **allele**.
6. **Genes** are responsible for **body structure** and for various other characters.
7. **ABO blood types**: The blood types A, B, AB and O types are characterised by the presence or absence of 'antigens' on the plasma membrane of the RBCs.
8. **Sex chromosomes**: A pair of chromosomes called **allosomes** or sex chromosomes is responsible for the determination of sex. Non-sex chromosomes are called **autosomes**.
9. **Male Heterogametic method**: In this type, the female has two 'X' chromosomes and the male has only a single 'X' chromosome. This is of two types: (i) XX-XO (ii) XX-XY **[IPE]**
10. **Female heterogametic Method**: In this type, female produces two types of ova and male produces only one type of sperms. This of two types: (i) ZO-ZZ type (ii) ZW-ZZ type. **[IPE]**

**FRUITY Qs OF IPE****(1 x 4) + (1 x 8) = 12 Marks**

1. How is sex determined in human beings?
2. Describe erythroblastosis foetalis.
3. Describe the Genic Balance Theory of sex determination.
4. What are multiple alleles? Describe multiple alleles with the help of ABO blood groups in man.
5. Describe chromosomal theory of sex determination.
6. What is crisscross inheritance? Explain the inheritance of one sex linked recessive character in human beings.
7. What is DNA fingerprinting? Mention its applications.