Ch-8 Heredity

1. **Heredity –**
    a. Refers to the transfer of characters from parents to children.
    b. Gregor Johann Mendel was the first to explain the principles of inheritance by conducting experiments on garden pea plant (Pisum Sativum).
    c. He conducted various crosses such as monohybrid crosses and dihybrid crosses, etc., and gave rules for the inheritance of traits.
    d. He postulated that there are a pair of unit factors controlling each character, inherited one from each parent.
    e. At the time of gamete formation, these factors segregate so that each gamete receives only one factor of each character. This is called the law of segregation.
    f. In F_1 generation, only one character is expressed. Mendel called it as dominant character. The character which was not expressed was termed recessive character.
    g. Based on dihybrid cross, Mendel gave the law of independent assortment, which stated that inheritance of factors controlling a particular trait in an organism are independent of each other.
2. **Inherited Traits –**
    a. Controlled by specific genes.
    b. Passed on from one generation to another.
3. **Acquired Traits –**
    a. Involve changes in non-reproductive tissues.
    b. Not inherited from one generation to other.
4. **Evolution –**
    a. Refers to a gradual change form one form to another since the beginning of life.
    b. The most accepted theory of evolution now a days is called synthetic theory of evolution.
5. **Key Factors in Modern Concept of Evolution –**
    a. Genetic variation.
    b. Natural selection.
    c. Reproductive isolation.
6. **Evidences of Evolution –**
    a. Morphological and Anatomical evidences.
    b. Embryological evidences.
    c. Paleontological evidences.
7. **Variation –** refers to the differences shown by the individuals of same species.
8. **Genetic –** it is the study of heredity and variation.
9. **Speciation –** origin of new species from existing one.