



Shri Shivaji Education Society Amravati's  
**Shri Shivaji Science & Arts College , Chikhli , Dist . Buldana**  
Department of Zoology  
**Question Bank : B.Sc. - II ( SEM - IV )**  
**Unit - II- Linkage**



**Multiple Choice Questions :**

- 1 ) A linkage group is defined as \_\_\_\_\_
  - a ) all the linked genes of a chromosomal pair
  - b ) different groups of genes present on different chromosomes
  - c ) all the genes located on the same chromosome
  - d ) none of the above
- 2 ) When linked characters on genes are inherited together through two or more generations, it is called \_\_\_\_\_
  - a) complete linkage
  - b ) continuous linkage
  - c ) incomplete linkage
  - d ) consistent linkage
- 3 ) The linked characters would always inherit together till they are \_\_\_\_\_
  - a ) delinked due to segregation
  - b ) masked by dominance
  - c ) mutated
  - d ) Separated due to crossing over which occurs
- 4 ) The genes of different traits located on different loci on the same chromosome are \_\_\_\_\_
  - a ) alleles
  - b) linked
  - c) pleiomorphic
  - d) mutated
- 5 ) The theory of linkage propounded in 1911 was observed in *Drosophila* by \_\_\_\_\_
  - a) Sutton
  - b) Bateson
  - c) T. H.morgan

d) Green

6) Strength of linkage is related inversely to distance between genes \_\_\_\_\_

- a) genes
- b) chromatids
- c) telomeres
- d) chromosomes

7) Crossing over brings about \_\_\_\_\_

- a) Cytoplasmic reorganization
- b) recombination of genes
- c) complete linkage
- d) no significant change

8) During meiotic crossing over that occurs between homologous pairs of chromosomes has \_\_\_\_\_

- a) no genetic importance
- b) important to bring about recombination of characters
- c) Important because it produces nutrition
- d) Important because it produces cytoplasmic reorganization

9) Crossing over in diploid organism is responsible for \_\_\_\_\_

- a) segregation of alleles
- b) dominance of genes
- c) recombination of linked alleles
- d) linkage between genes

10) Crossing over is useful because it brings about \_\_\_\_\_

- a) linkage
- b) stability
- c) variation
- d) homozygosity

11) The term crossing over was coined by \_\_\_\_\_

- a) Darlington
- b) Boveri

- c) Morgan
  - d) Stern
- 12) Inheritance of ABO blood group illustrates\_\_\_\_\_
- a) Endoploidy
  - b) Polyploidy
  - c) incomplete dominance
  - d) Multiple allelism
- 13) In an accident there is great loss of blood and there is no time to analyse the blood group, which blood can be safely transferred?
- a) O and Rh negative
  - b) BB and Rh negative
  - c) O and Rh positive
  - d) AB and Rh positive
- 14) Agglutinogenes are not found in blood group \_\_\_\_\_
- a) B
  - b) A
  - c) AB
  - d) O
- 15) Which of the following blood groups belong to the category of universal recipient?
- a) A
  - b) AB
  - c) B
  - d) O

**Short Answer Questions :**

- 1) Coupling and repulsion
- 2) Complete linkage
- 3) Incomplete linkage
- 4) Linkage group
- 5) Arrangement linked genes
- 6) Significance of linkage

- 7 ) Characteristics of crossing over
- 8 ) Mechanisms of crossing over
- 9 ) Double crossing over
- 10 ) Single crossing over
- 11 ) Multiple crossing over
- 12 ) Darlington's theory of crossing over
- 13 ) Breakage and Reunion theory
- 14 ) Copy choice theory
- 15 ) Factors influencing crossing over
- 16 ) Importance of crossing over
- 17 ) Significance of crossing over
- 18 ) Important characters of multiple alleles

**Long Answer Questions :**

- 1 ) Describe the process of linkage and give its significance
- 2 ) Describe complete and incomplete linkage with suitable examples
- 3 ) Describe linked group and incomplete linkage
- 4 ) Define the crossing over and meiotic crossing over
- 5 ) Describe the copy choice and breakage and reunion theory of crossing over
- 6 ) Describe the mechanism of crossing over
- 7 ) Describe Darlington's Strain theory
- 8 ) Describe the kinds of crossing over according to number of chiasmata
- 9 ) What are the factors influencing the crossing over and significance
- 10 ) Describe multiple alleles and eye colour in *Drosophila*
- 11 ) Describe important characters or features of multiple alleles and ABO blood groups in man
- 12 ) Describe genetic print of view of Erythroblastosis foetalis
- 13 ) Describe multiple alleles and erythroblastosis foetalis

**Answers Key**

1 ) a 2) a 3) d 4) b 5) c 6 ) a 7) b 8) b 9) b 10) a 11) a 12) c 13) a 14) d 15) b