

Question Bank

Multiple Choice Questions

- 1) Pairing of homologous chromosomes is seen during .....  
a) Leptotene    b) Diplotene    c) Zygotene    d) Pachytene
- 2) In Hybridization technique Mendel had selected two.....unlike  
genetical constitution.  
a) *Pisum sativum*    b) Jawar    c) Rice    d) Sunflower
- 3) Griffith effect is related with.....  
a) DNA transcription    b) RNA translation  
c) Bacterial Transformation    d) Bacterial transduction
- 4) Crossing over occurs between .....  
a) Sister chromatids    b) Non sister chromatids  
c) Non – Homologous chromosomes    d) None of the above
- 5) An organism is  $4n$  this condition is called .....  
a) Nallisomy    b) Tetraploidy    c) Trisomy    d) Aneuploidy
- 6) The larva of *Bonellia*, when settles on proboscis, develops into .....  
a) Female    b) Intersex    c) Male    d) Bisexual individual
- 7) Calico cat coat colour patterns is an example of .....  
a) Dominance    b) Co-dominance    c) Lyonization    d) Translocation
- 8) Barr body is nothing but .....  
a) 'Y' Chromosomes    b) Inactivated 'X' chromosomes  
c) Inactivated autosomes    d) Inactivated 'Y' chromosomes

- 9) In case of Down's syndrome, the no. of chromosomes per somatic cell is .....
- a) 45      b) 46      c) 47      d) 48
- 10) Patau syndrome is due to .....
- a) Nallisomy      b) Monosomy      c) Deletion      d) Trisomy
11. ....is phenotypic monohybrid ratio
- a) 2:1      b) 3:1      c) 4:1      d) 1:3
12. Various forms of given gene are called .....
- a) Genotype      b) Phenotype      c) Gamete      d) Alleles
13. Roan colour cattle is an example of .....
- a) Co-dominance      b) Incomplete dominance      c) multiple allele      d) dominance
- 14) .....Blood group is universal recipient.
- a) B      b) A      c) AB      d) O
- 15) The ratio obtained in complementary interaction of genes is.....
- a) 9:3:3:1      b) 9:7      c) 15:7      d) 13:3
- 16) In crocodiles the sex determination is due to .....
- a) Sex chromosomes      b) Autosomes  
c) Ratio of X/A      d) Certain environmental factors
- 17) In case of honey bee 'the mechanism of sex determination is due to .....
- a) XX, XY type      b) XX, XO TYPE  
c) ZZ, ZW type      d) Hyploidy, Diploidy type
- 18) Recessive gene can be expressed in .....
- a) Homozygous condition      b) Heterozygous condition  
c) Both the Above condition      d) None of these condition
- 19) ..... is father of genetics.
- a) Mendel      b) Darwin      c) Lamarck      d) Rober'tlook
- 20) In supplementary interaction ratio obtained is .....

- a) 9:3:4      b) 9:7      c) 9:3:3:1      d) 3:1
- 21) The genotype of blood group O is .....
- a) IAIB                  b) IBIB                  c) IiIi                  d) IAIA
- 22) The gene I codes for an enzyme .....
- a) Isomerase                  b) Dehydrogenase  
c) Glycerol                  d) Maltase
- 23) Cytological proof of crossing over in drosophila was given by.....
- a) MC clung    b) MC Clintock c) Stern    d) Creighton
- 24) Mechanism of crossing over occurs during .....
- a) Pachytene of prophase    b) Second meiotic division  
c) Before synapsis                  d) Creighton
- 25) In Drosophila & in human, the mechanism of sex determination is of .....
- a) XX, XY    b) XX, XO    c) ZZ, ZW type                  d) Haploidy
- 26) A genetic disorder called Down's syndrome is due to .....
- a) Polyploidy                  b) Nullisomy                  c) Trisomy                  d) Monosomy
- 27) The no. of Barr bodies in XXY human are .....
- a) Nil                  b) One                  c) Two                  d) Three
- 28) In which organism among the following, is an intersex as per the gene balance theory?
- a) 2X2A    b) 1X4A    c) 2X4A    d) 3X4A
- 29) In which insect among the following, the female is hetrogametic?
- a) Queen bee                  b) Butterfly                  c) Grasshopper                  d) Cockroach
- 30) Cri-du-chat Syndrome is due to .....
- a) Nullisomy                  b) Duplication                  c) Deletion    d) Inversion
- 31) Allele is.....
- a) Segment of gene    b) Form of a gene    c) Special kind of gene  
d)Amuton

- 32) Pairing of homologous chromosomes is seen during.....  
a) Leptotene b) Diplotene c) Zygotene d) Pachytene
- 33) Linkage in Drosophila was first discovered by .....  
a) Bridges b) Mendel c)Morgan d)Bateson & Punnet
- 34) The best example of incomplete dominance is .....  
a)Mirabilis Jalapa b)Rose c)Lotus d) Sunflower
- 35) Genes that affect survivality of an individual are called.....  
a) Lethal genes b) Dominant Genes c)Silent gene d) Recessive Gene
- 36) ABO Blood group system is due to .....  
a)Multifactor inheritance b) Incomplete Dominance  
c) Multiple allelism d) Epistasis
- 37) Sickle cell anemia is.....  
a)Sex linked inheritance b)Autosomal heritable disease  
c) Infectious disease d) Deficiency disease
- 38) Philadelphia chromosome is formed due to .....  
a)Inversion b)Deletion c) Duplication d) Translocation
- 39) Mechanism of crossing over occurs during .....  
a) Pachytene of prophase b) Second meiotic division  
c) Before synapsis d) Diplotene
- 40) Crossing over in diploid organism is responsible for.....  
a) Recombination of linked genes b) Dominance of genes  
c) Linkage between genes d) Segregation of alleles
- 41) Huntington's chorea shows age –related lethality. If the lethal effect is seen after producing the children, it is called.....  
a) Lethal b) Semilethal c) Supralethal d)None of these
- 42) Discovery of Mendels' laws in.....  
a)1900 b)1909 c)1908 d)1800

- 43) John Cotto in 1803 discovered..... disease  
a) Colour blindness b)Haemophilia c) Hypertrichosis d) Xeroderma
- 44) In 1911 Wilson discovered by .....disease  
a) Haemophilia b) Colour blindness c) Hypertrichosis d) Xeroderma
- 45) Sex linked inheritance was discovered by .....  
a) Karl Landsteiner b) A Von c) T.H Morgan d) John Cotto
- 46) Mendel's First experiment was on a .....plant  
a) Mango b) Banana c) Coconut d) Pea plant
- 47) Who discovered the ABO Blood group in man?  
a) Dr. Karl Landsteiner b) A.Von c) T.H. Morgan d) Wilson
- 48) W. Bateson & R.C Punnet in ..... Reported the phenomenon of coupling &repulsion in sweet peas.  
a) 1909 b) 1900 c) 1989 d) 1906
- 49) Mutations are of ..... types.  
a) Chromosomal Mutation b) Gene Mutation  
c) Both A & B d) None of these
- 50) It is an aneuploid in which one chromosome is .....  
a) Less b) Same c) High d) None of these
- 51) In human normal chromosomal no. is.....  
a) 50 b) 48 c) 90 d) 46

## Long Questions

- 1) Describe in details genetic variation.
- 2) Describe sex linked inheritance and types of sex linked inheritance.
- 3) Describe Environmental sex determination in *Bonellia* & *Crepidula*
- 4) What is linkage & Describe the types of linkage with suitable example.
- 5) Explain multiple alleles with reference to coat colour in rabbit.
- 6) Describe cytological evidence of crossing over.
- 7) Describe the Mechanism of crossing over.
- 8) Explain law of segregation in details.
- 9) Describe Brief co-dominance & incomplete dominance .
- 10) Which are mutation describe various types you have studied?
- 11) What is X-chromosome inactivation & its importance.
- 12) Describe genotypes of *Drosophila*.
- 13) Mechanism of sex determination in honey bee.
- 14) Mechanism of sex determination in bugs
- 15) Give an account on law of dominance with suitable example

## Short Notes

- 1) Monohybrid cross
- 2) Incomplete Linkage
- 3) Mechanism of sex determination in Birds.
- 4) Blood groups.
- 5) Supplementary Genes coat colour in rodents
- 6) Factors affecting crossing over.
- 7) Significance of Linkage & crossing over.
- 8) Write a note on Duplication
- 9) Complementary Genes flower colour in sweet pea.
- 10) Mechanism of sex determination of honey bee.
- 11) Mendel's Hybridization Technique
- 12) Griffiths Effects.
- 13) Sources of genetic variation.
- 14) Fully Lethal genes.
- 15) Co-Dominance.
- 16) Supplementary factors.
- 17) Write a note on polyploidy.
- 18) Write a note on physical mutagenes.

- 19) Mechanism of sex determination in Human.
- 20) Types of genetic variation.
- 21) Incomplete dominance.
- 22) Colour Blindness.
- 23) Hemophilia
- 24) Linkage in Drosophila
- 25) Factors affecting Linkage
- 26) Heterogametic Female.
- 27) Heterogametic male
- 28) Chemical Mutagen.
- 29) Pairing or Synapsis.
- 30) Multiple Alleles.
- 31) Interaction of Genes.
- 32) Principles of Inheritance.