

SHIVARAJ COLLEGE OF ARTS COMMERCE &
D.S.KADAM SCIENCE COLEGE, GADHINGLAJ.
DEPARTMENT OF ZOOLOGY

B.Sc.Part I

GENETICS PAPER IV

QUESTION BANK

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A) MULTIPLE CHOICE QUESTIONS.

- 1) In Hybridization technique Mendel had selected----- plant.
A) *Pisum sativum* B) Jawar
C) Rice D) sunflower
- 2) According to Mendel a character that represent itself in the hybrid is called-----
A) Recessive Character B) Ancestral Character
C) Dominant Character D) Maternal Character
- 3) Recessive gene can be expressed in-----
A) Homozygous condition B) Heterozygous Condition
C) Both the above D) None of these.
- 4) Genes that affects survivality of an individual are called-----
A) Lethal Genes B) Dominant Genes
C) Silent genes D) Recessive genes
- 5) Sickle cell anemia is -----
A) Sex linked inheritance B) Autosomal heritable disease
C) Infectious disease C) Deficiency disease
- 6) Allele is-----
A) Segment of gene B) Form of a gene
C) Special kind of gene D) A muton
- 7) Mechanism of crossing over occurs during-----
A) Pachytene and Prophase B) Second meiotic division
C) Before synapsis D) Diplotene
- 8) Pairing of homologous chromosomes is seen during-----
A) Leptotene B) Diplotene
C) Zygotene D) Pachytene

- 9) Linkage in *Drosophila* was discovered by-----
A) Bridge B) Mendel
C) Morgan D) Batson and Punnet
- 10) In case of honey bee, the males are -----
A) Haploid B) Diploid
C) Both A and B D) none of this
- 11) ----- is known as father of genetics.
A) Mendel B) Darwin
C) Lamarck D) Robert Hook
- 12) Roan colour coat in short horn cattle is the example of
A) Co- dominance B) Incomplete dominance
C) Complete dominance D) Multiple alleles.
- 13) *M. jalapa* is the example of
A) Co- dominance B) Incomplete dominance
C) Complete dominance D) Multiple alleles.
- 14) Mendel selected Number of characters of pea plant.
A) 3 B) 5
C) 7 D) 9
- 15) is Mendelian phenotypic monohybrid ratio
A) 3:1 B) 1:2:1
C) 9:3:3:1 D) 9:7
- 16) is Mendelian phenotypic dihybrid ratio
A) 3:1 B) 1:2:1
C) 1:1 D) 9:3:3:1
- 17) Genic balance theory was put forth by
A) T. H. Morgan B) Bridges
C) Walker and Cuspira D) C.Stern
- 18) Tendency of two or more genes to remain together on the chromosome during the course of inheritance is called
A) Crossing over B) Back cross
C) Linkage D) Test cross
- 19) Crossing over occurs between.....
A) Sister chromatids B) Non sister chromatids
C) Homologous chromosomes D) None of these

- 20) Law of segregation is also called
- A) Law of purity of gametes B) law of Dominance
B) Law of independent assortment D) Multiple alleles
- 21) The branch of Biology which deals with study of heredity and variation is called
- A) Cytology B) Genetics
C) Cell biology D) Physiology
- 22) the branch of biology deals with the study of heredity.
- A) Genetics B) Cell biology
C) immunology D) Physiology
- 23) In hybridization technique Mendel had selected two..... plants of unlike genetic constitution.
- A) *Pisum sativum* B) Jawar
C) Rice D) Sunflower
- 24) Two dominant genes in a complementary interaction are.....
- A) Allelic genes B) Located on different chromosome
C) Non –allelic genes D) none of the above
- 25) A -Blood group person carries Antigen.
- A) 'B' type of B) 'A' type of
C) 'AB' type of D) 'O' type of
- 26) B- Blood group person carries Antigen.
- A) 'B' type of B) 'A' type of
C) 'AB' type of D) 'O' type of
- 27) AB Blood group person carries Antigen.
- A) 'B' type of B) 'A' type of
C) 'AB' type of D) 'O' type of
- 28) O- Blood group person carries Antigen.
- A) 'B' types of B) 'A' types of
C) 'AB' types of D) none of these
- 29) Blood group is universal acceptor.
- A) 'B' B) 'A'
C) 'AB' D) 'O'
- 30) ABO blood group system was discovered by
- A) T. H. Morgan B) Karl Landsteiner
B) Walker and Cuspira D) C.Stern

- 42) Recessive gene can be expressed in.....
 A) Homozygous condition B) Heterozygous condition
 C) Both a & b D) none of above condition
- 43) In *Drosophila* and in human, the mechanism of sex determination is of.....
 A) XX- XY type B) XX- XO type
 C) ZZ- ZW type D) Haploidy-Diploidy
- 44) In complementary gene interaction ratio obtained is.....
 A) 9:3:4 B) 9:7
 C) 9:3:3:1 D) 3:1
- 45) In supplementary gene interaction ratio obtained is.....
 A) 9:3:4 B) 9:7
 C) 9:3:3:1 D) 3:1
- 46) Allele is.....
 A) Segment of genes B) form of a gene
 C) Special kind of gene D) A muton
- 47) In case of honey bee, the mechanism of sex determination is of.....
 A) XX, XY type B) XX, XO type
 C) ZZ, ZW type D) Haploidy, Diploidy type
- 48) Hypertrichosis is Linked character.
 A) X- linked B) XY- linked
 C) Y- linked D) All of these
- 49) The red blindness is called.....
 A) Deuteropia B) Protonopia
 C) Autosomal trait D) All of these
- 50) The larva of *Bonellia*, when settles on proboscis, develops into.....
 A) Female B) Intersex
 C) Male D) Bisexual individual

B) LONG ANSWER QUESTIONS

1. Describe the principle of dominance with a suitable example.
2. Describe Mendel's work on transmission of trait.
3. Describe the principle of segregation with a suitable example.
4. Describe the principle of independent assortment with a suitable example
5. What are multiple alleles? Explain it with suitable example.
6. What are multiple alleles? Add a note on coat colour in rabbits.
7. Give a detailed account of ABO blood group system in man and add a note on its inheritance.
8. What is linkage? Explain the two types of linkages with suitable example.
9. What is crossing over? Describe the mechanism of crossing over.
10. What is interaction of genes? Explain supplementary gene interaction with suitable example.
11. What is interaction of genes? Explain complementary gene interaction with suitable example.
12. Define crossing over and add a note on cytological evidence of crossing over.
13. What is crossing over and add a note on significance of crossing over.
14. What is mutation? Describe various types of mutation.
15. Describe Chromosomal theory of sex determination.
16. What are sex chromosomes? Explain the Genic balance theory of sex determination.

C) SHORT ANSWERS QUESTIONS.

1. Law of dominance.
2. Law of segregation.
3. Law of independent free assortment.
4. Co-dominance.
5. Incomplete dominance.
6. Sex linked inheritance.
7. Colorblindness.
8. Haemophilia.
9. Complete linkage.
10. Incomplete linkage.
11. Complementary gene interaction.
12. Supplementary gene interaction.
13. ABO blood groups.
14. Genic balance theory.
15. Sex determination in *Bonellia*.
16. Honey bee method of sex determination.
17. Mutation.
18. Stern's experiment.
19. Significance of linkage.
20. Significance of crossing over.
21. Heterogametic males
22. Heterogametic females.