

**Rayat Shikshan Sanstha's
RAJARSHI CHHATRAPATI SHAHU COLLEGE, KOLHAPUR.**

DEPARTMENT OF ZOOLOGY (2022-23)

B. Sc. I, Sem- II (2022-23)

Paper IV- Genetics

Question Bank

.....
Q.1) Select the correct answer from the following and complete sentence.

- 1)is father of genetics
A) Mendel B) Darwin
C) Lamark D) Robert Hook
- 2) In hybridization technique Mendel had selected two..... plants of unlike genetical constitution.
A) *Pisum Sativum* B) Jawar
C) Rice D) Sunflower
- 3).....Phenotypic monohybrid ratio
A) 2:1 B) 3:1
C) 4:1 D) 1:3
- 4) According to Mendel a characters that represents itself in the hybrid is called.....
A) Recessive Character B) Ancestral Character
C) Dominance Character D) Maternal Character
- 5) Various forms of a given gene are called
- 6) The gene 'I' codes for an enzyme....
A) Isomrase B) Dehydrogenase
C) Glycerol transferase D) Maltase
- 7) The roan colour cattle is an example of
- 8) Gene affect survivality of an individual are called.....

- A) Lethal genes B) Dominant gene
C) Silent genes D) Recessive gene

9) In Supplementary interaction ratio obtained is

- A) 9:3:4 B) 9:7
C) 9:3:3:1 D) 9:1

10) Sickle cell anemia is ...

- A) Sex linked inheritance B) Autosomal heritable disease
C) Infectious disease D) Deficiency

11) 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, diplody

12) 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, diplody

13) In which organism among the following, the male has one X chromosomes less?

- A) Cockroach B) Fowl
C) *Drosophila* fly D) Worker honey bee

14) In which insect among the following, the female is heterogametic?

- A) Queen bee B) Butterfly
C) Grasshopper D) Cockroach

15) The larva of *Bonellia*, when settles on proboscis, develops into

- A) Female B) Intersex
C) Male D) Bisexual individual

16) Linkage in *Drosophila* was first discovered by.....

- A) Bridges B) Mendel

C) Morgan D) Bateson and Punnet

17) Two dominant genes in a complementary interaction are.....

A) Allelic genes B) Located on different chromosomes

C) Non- allelic genes D) None of the above

18) Genes that affect survivality of an individual are called.....

A) Lethal genes B) Dominant genes

C) Silent genes D) Recessive genes

19) The ratio obtained in complementary interaction of gene is

A) 9:3:3:1 B) 9:7

C) 15:7 D) 13:7

20) ABO blood group system is due to

A) Multifactor inheritance B) Incomplete dominance

C) Multiple allelism D) Epistasis

21) Recessive gene can be expressed in.....

A) Homozygous Condition B) Heterozygous condition

C) Both the above conditions D) None of these condition

22) Various forms of a given gene are called

A) Genotypes B) Phenotype

C) Gamete D) Alleles

Q.2) Short notes (Any One)

1) Monohybrid cross

2) Mendels hybridization technique

3) Fully lethal gene

4) Supplementary factor

- 5) Co dominance
- 6) Blood group
- 7) Incomplete dominance
- 8) Incomplete linkage
- 9) Significance of linkage and crossing over
- 10) Complete linkage
- 11) Mechanism in sex determination in human
- 12) Mechanism in sex determination in Drosophila
- 13) Mechanism in sex determination in Birds
- 14) Mechanism in sex determination in honey bee
- 15) Mechanism in sex determination in bugs
- 16 types of genetic Variation
- 17) Multiple alleles with suitable examples.

Q.3) Long answer questions.

- 1) Explain the law of segregation
- 2) Describe law of Dominance (Monohybrid Cross)
- 3) Give an account on multiple alleles and explain it with reference to ABO blood groups in man.
- 4) What are lethal genes and explain it with reference to complementary factors
- 5) Explain multiple alleles with reference to coat colour in rabbit
- 6) Define interaction of genes and explain it with reference to complementary factors
- 7) What is linkage? Describe the types of linkage with suitable examples.
- 8) What is crossing over? Describe the mechanism of crossing over.
- 9) Describe different types of sex determination mechanisms you have studied.
- 10) Describe X/A theory regarding various genotypes of Drosophila suggested by Bridges.
- 11) Describe in brief co-dominance and incomplete dominance.