

B.Sc. I Sem- II Genetics Question Bank

M.C.Q.

1)-----is father of genetics.

- a) Mendel
- c) Lamark

- b) Darwin
- d) Robert Hook

2)The roan colour cattle is an example of-----

- a) co-dominance
- c) multiple allele

- b) incomplete dominance
- d) dominance

3)The genotype of blood group 'O' is-----

- a) $I^A I^B$
- c) $i i$

- b) $I^B I^B$
- d) $I^A I^A$

4)The ratio obtained in complementary interaction of genes is-----

- a) 9:3:3:1
- c) 15:7

- b) 9:7
- d) 13:3

5)Sickel cell anemia is-----

- a) sex linked inheritance
- c) infectious disease

- b) autosomal heritable disease
- d) deficiency disease

6)Crossing over occurs between-----

- a) sister chromatids
- c) non homologous chromosomes

- b) non-sister chromatids
- d) none of the above

7)Cri-du-chat syndrome is due to-----

- a) nullisomy
- c) deletion

- b) duplication
- d) inversion

8) 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

9)-----is phenotypic monohybrid ratio.

- a) 2:1
- b) 3:1
- c) 4:1
- d) 1:3

10) Various forms of a given gene are called-----

- a) genotype
- b) phenotype
- c) gamete
- d) allele

11)-----blood group is universal recipient.

- a) 'B'
- b) 'A'
- c) 'AB'
- d) 'C'

12) The gene 'I' codes for an enzyme-----

- a) isomerase
- b) dehydrogenase
- c) glycerol transferase
- d) maltase

13) Linkage in Drosophila was first discovered by-----

- a) Bridges
- b) Mendel
- c) Morgan
- d) Bateson and Punnett

14) Mechanism of crossing over occurs during-----

- a) Pachytene of prophase
- b) Second meiotic division
- c) Before synapsis
- d) Diplotene

15) Patau's syndrome is due to-----

- a) nullisomy
- b) monosomy
- c) deletion
- d) trisomy

16) 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 type

17) Griffith effect is related with-----

- a) DNA transcription
- b) RNA translation
- c) Bacterial transformation
- d) Bacterial transduction

18) In hybridization technique Mendel had selected two-----plants unlike genetical constitution.

- a) *Pisum sativum*
- b) Jawar
- c) Rice
- d) Sunflower

19) In supplementary interaction ratio obtained is-----

- a) 9:3:4
- b) 9:7
- c) 9:3:3:1
- d) 3:1

20) ABO blood group system is due to-----

- a) multifactorial inheritance
- b) incomplete dominance
- c) multiple allelism
- d) epistasis

21) An organism is $4n$. This condition is called as-----

- a) nullisomy
- b) tetraploidy
- c) trisomy
- d) aneuploidy

22) Philadelphia chromosome is formed due to-----

- a) inversion
- b) deletion
- c) duplication
- d) translocation

23) Recessive gene can be expressed in-----

- a) homozygous condition
- b) heterozygous condition
- c) both the above conditions
- d) none of these conditions

Short Answer Questions

1. Complementary factor
2. Haemophilia
3. Test cross
4. Factors affecting crossing over.
5. Sex linked inheritance
6. Write a note on mechanism of sex determination in honey bees.
7. Monohybrid cross
8. Sources of genetic variation
9. Incomplete dominance
10. Blood groups
11. Write a note on polyploidy
12. Write a note on mechanism of sex determination in human.
13. Law of segregation
14. Sources of genetic variation
15. Colour blindness
16. Co-dominance
17. Significance of linkage and crossing over
18. Types of mutation due to change in the structure of a chromosome.

Long Answer Questions

1. Describe different types of sex determination mechanisms you have studied.
2. What do you mean by a mutation? Describe various types of mutations due to change in chromosomal number.
3. Give an account on law of dominance with suitable example.
4. What is Gene interaction? Explain the supplementary Gene interaction.
5. What is mutation? Describe the types of mutation due to change in structure of chromosome?
6. Give an account on law of dominance with suitable example.
7. Explain multiple alleles with reference to coat colour in rabbit.
8. What is crossing over? Describe the mechanism of crossing over.
9. What are mutagens? Describe various types you have studied.

