

B.Sc. ZOOLOGY
FIFTH SEMESTER (SPECIAL REPEAT)
PRINCIPLES OF GENETICS
BSZ-502
[USE OMR SHEET FOR OBJECTIVE PART]

SET
A

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

Marks: 20

(Objective)

1 × 20 = 20

Choose the correct answer from the following:

- Who discovered transposones?
a. Barbara Mc Clintock
b. Frederick Griffith
c. Hershey and Chase
d. dColin MacLeod
- The killer chemical secreted by kappa particles is:
a. Secretin
b. Paramycin
c. Plasmon
d. Poky
- Splicing of RNA removes:
a. Pallindrome
b. Exon
c. Poly adenyl tail
d. Intron
- Addition or deletion of bases causes which kind of mutation?
a. Transcription
b. Frameshift
c. Transition
d. Transversion
- Which of the following role is performed by a bacteriophage in transduction?
a. Donor
b. Recipient
c. Vector
d. Episome
- The anticodon is a structure on:
a. mRNA
b. Ribosome
c. tRNA
d. rRNA
- Which of the following is not ionizing radiation?
a. X rays
b. Cosmic ray
c. α- rays
d. Infra Red (IR)
- Extranuclear inheritance commonly occur in:
a. Nucleus
b. Ribosomes
c. Cytoplasmic organelles
d. Cell membrane
- Point mutation involves:
a. Deletion
b. Duplication
c. Insertion
d. Change in single base pair
- Transfer of 'DNA' from one bacterial cell to another is carried out by:
a. Conjugation
b. Transformation
c. Transduction
d. All of the above

11. Law of segregation states that:
- a. Allele separates during cytokinesis
 - b. Alleles segregates during dihybrid cross
 - c. Two alleles for each trait separates during meiosis
 - d. None of the above
12. It is caused due to a recessive mutant allele on chromosome 12 (autosome) called:
- a. Haemophilia
 - b. Pneumonia
 - c. Sickle cell anaemia
 - d. Phenylketonuria
13. Linkage is:
- a. Physical association of two or more gen
 - b. Physical association of one gene
 - c. Mutation in chromosomes
 - d. All of the above
14. The generation of non-parental gene combination is called:
- a. Polyploidy
 - b. Independent assortment
 - c. Recombination
 - d. Mutation
15. Polyploidy is the failure of:
- a. Meiotic cell division
 - b. Telophase stage
 - c. Cytokinesis
 - d. None of the above
16. A system to analyze the distribution and movement of characters in the family tree is:
- a. Test cross
 - b. Pedigree analysis
 - c. Back cross
 - d. None
17. It is an autosome linked recessive trait and is due to a mutant allele on chromosome 11:
- a. Aneuploidy
 - b. Sickle cell anaemia
 - c. Polyploidy
 - d. None
18. When IA and IB are present together, both are equally dominant and produce glycoproteins A and B and the blood group is AB. They are called:
- a. Multiple Allele
 - b. Dominant Allele
 - c. Co-dominant allele
 - d. All of these
19. It is a cross between two individuals of the same species, in which the inheritance of contrasting pairs of two traits is:
- a. Monohybrid cross
 - b. Dihybrid cross
 - c. Incomplete co dominance
 - d. All of these
20. Chromosome theory of inheritance was proposed by:
- a. Gregor Johann Mendel
 - b. Langdon Down
 - c. Sutton and Boveri
 - d. None

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(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

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| 1. Define Genetic disorder. Describe the different types of Mendelian disorder. | 3+7=10 |
| 2. Illustrate the incomplete dominance with the help of example. | 10 |
| 3. Discuss about the Morgan's Linkage experiment with example. | 10 |
| 4. What is mutation? Explain its types. | 2+8=10 |
| 5. Write short notes on:
a) Complementation
b) Transposones | 5+5=10 |
| 6. What is Test cross? Write with the help of a suitable example.
Describe the monohybrid cross with the help of Mendel's experiment. | 3+7=10 |
| 7. Explain Bacterial conjugation with suitable diagram. | 7+3=10 |
| 8. Describe the mechanism of shell coiling in snail, <i>Limnaea peregra</i> . | 10 |

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