

Write the following information in the first page of Answer Script before starting answer

ODD SEMESTER EXAMINATION: 2020-21

Exam ID Number _____

Course _____ Semester _____

Paper Code _____ Paper Title _____

Type of Exam: _____ (Regular/Back/Improvement)

Important Instruction for students:

1. Student should write objective and descriptive answer on plain white paper.
2. Give page number in each page starting from 1st page.
3. After completion of examination, Scan all pages, convert into a single PDF, rename the file with Class Roll No. (2019MBA15) and upload to the Google classroom as attachment.
4. Exam timing from 10am – 1pm (for morning shift).
5. Question Paper will be uploaded before 10 mins from the schedule time.
6. Additional 20 mins time will be given for scanning and uploading the single PDF file.
7. Student will be marked as ABSENT if failed to upload the PDF answer script due to any reason.

B.Sc. ZOOLOGY
FIFTH SEMESTER
PRINCIPLES OF GENETICS
BSZ - 502

Duration : 3 hrs.

Full Marks : 70

(PART-A: Objective)

Time : 20 min.

Marks : 20

Choose the correct answer from the following:

1×20=20

1. 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
2. It is caused due to a recessive mutant allele on chromosome 12 (autosome) called-
 - a. Haemophilia
 - b. Pneumonia
 - c. Sickle cell anaemia
 - d. Phenylketonuria
3. 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
4. The generation of non-parental gene combination is called-
 - a. Polyploidy
 - b. Independent assortment
 - c. Recombination
 - d. Mutation
5. Polyploidy is the failure of-
 - a. Meiotic cell division
 - b. Telophase stage
 - c. Cytokinesis
 - d. None of the above
6. 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
7. 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
8. 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
9. 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

10. Chromosome theory of inheritance was proposed by-
- a. Gregor Johann Mendel
 - b. Langdon Down
 - c. Sutton and Boveri
 - d. None
11. Who discovered transposones?
- a. Barbara Mc Clintock
 - b. Frederick Griffith
 - c. Hershey and Chase
 - d. dColin MacLeod
12. The killer chemical secreted by kappa particles is-
- a. Secretin
 - b. Paramecin
 - c. Plasmon
 - d. Poky
13. Splicing of RNA removes-
- a. Pallindrome
 - b. Exon
 - c. Poly adenyl tail
 - d. Intron
14. Addition or deletion of bases causes which kind of mutation?
- a. Transcription
 - b. Frameshift
 - c. Transition
 - d. Transversion
15. Which of the following role is performed by a bacteriophage in transduction?
- a. Donor
 - b. Recipient
 - c. Vector
 - d. Episome
16. The anticodon is a structure on-
- a. mRNA
 - b. Ribosome
 - c. tRNA
 - d. rRNA
17. Which of the following is not ionizing radiation?
- a. X rays
 - b. Cosmic ray
 - c. α - rays
 - d. Infra Red (IR)
18. Extranuclear inheritance commonly occur in-
- a. Nucleus
 - b. Ribosomes
 - c. Cytoplasmic organelles
 - d. Cell membrane
19. Point mutation involves-
- a. Deletion
 - b. Duplication
 - c. Insertion
 - d. Change in single base pair
20. Transfer of 'DNA' from one bacterial cell to another is carried out by-
- a. Conjugation
 - b. Transformation
 - c. Transduction
 - d. All of the above

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(PART-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

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

1. Explain Bacterial conjugation with suitable diagram. 7+3=10

2. Write short note on 5+5=10
 - a. Complementation
 - b. Transposones

3. What is mutation? Explain its types. 2+8=10

4. What is Test cross with the help of suitable example? Describe the monohybrid cross with the help of Mendel's experiment. 3+7=10

5. Describe the mechanism of shell coiling in snail, *Limnaea peregra* 10

6. Define Genetic disorder. Describe the different types of Mendelian disorder. 3+7=10

7. Illustrate the incomplete dominance with the help of example. 10

8. Discuss about the Morgan's Linkage experiment with example. 10

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