

**Master's Degree Examination - November 2017  
I st Semester**

**Class : I PG  
Major : Zoology**

**Time: 3 hours  
Max. Marks: 60**

**17MZOC04 GENETICS**

**Part A**

**Choose the correct answer**

**10 x 1/2 = 5**

1. The tendency of offspring to differ from parents is called
  - a. Variation
  - b. Heridity
  - c. Inheritance
  - d. Resemblance
2. If different alleles are present in the same genotype then it is called
  - a. Homozygous
  - b. Heterozygous
  - c. Diallelic
  - d. Polyallelic
3. Linkage prevents
  - a. Homozygous condition
  - b. Segregation of alleles
  - c. Hybrid formation
  - d. Heterozygous condition
4. Crossing over occurs during
  - a. Pachytene
  - b. Diplotene
  - c. Diakinesis
  - d. Linkage
5. Which of the following is not a hereditary disease
  - a. Cystic fibrosis
  - b. Thalassaemia
  - c. Haemophilia
  - d. Cretinism
6. A person with the sex chromosome XXY suffers from
  - a. Gynandromorphism
  - b. Klinefelter's syndrome
  - c. Down's syndrome
  - d. Turner's syndrome
7. Set of all genes in any population is termed as
  - a. Population pool
  - b. Species pool
  - c. Gene pool
  - d. None of above
8. In breeding increases frequency of
  - a. Homozygous
  - b. Heterozygous
  - c. Genetic diversity
  - d. Genetic linkage
9. The flow of genetic material in microbial cells usually takes place from
  - a. RNA through DNA to protein
  - b. Proteins through RNA to DNA
  - c. DNA through RNA to proteins
  - d. None of these
10. Which method of gene transfer involves direct contact between the bacteria
  - a. Conjugation
  - b. Transduction
  - c. Transformation
  - d. All of these

**PART- B**

**Answer all Questions**

**Each answer should not exceed 200 words or one page**

11. a) Explain the Quantitative inheritance.

(OR)

b) Differentiate between Multiple alleles and Iso alleles.

12.a) Give an account on Chromosome mapping.

(OR)

b) Explain the Mechanism of Sigma particles in drosophila.

13.a) Discuss about the sex chromosomal abnormalities in Man.

(OR)

b) Explain the advantages of Human genome projects.

14.a) Dicuss about Hardy-Weinberg equilibrium.

(OR)

b) Explain the methods of Hybrid vigour.

15.a) Give an account on Hfr Conjugation.

(OR)

b) Explain the Retrotransposons.

**PART-C**

**Answer all Questions.**

**Each answer should not exceed 600 words or three pages**

16.a) Write an essay on Mendelian laws of inheritance.

(OR)

b) Discuss in detail about the ABO blood group an Rh factor.

17.a).Explain the sex determination and extra nuclear inheritance.

(OR)

b) Describe in detail about Shell coiling in snails. Add notes on Kappa particles in paramecium.

18. a) Discuss about the classification and identification of Human chromosomes.

(OR)

b) Explain the Chromosomal aberrations. Add notes on Pedigree charts.

19. a) What is gene frequency? Discuss the equilibrium of gene frequencies.

(OR)

b) Explain the animal breeding? Differentiate the Inbreeding and Outbreeding.

20.a) Write an essay on Lytic and Lysogenic cycles of bacterial transduction with suitable diagrams.

(OR)

b) Discuss about the IS elements, Ac and Dc elements with suitable examples.