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**MANE-001**

**MASTER IN ANTHROPOLOGY (MAAN)**

**Term-End Examination**

**December, 2023**

**MANE-001 : HUMAN GENETICS**

*Time : 3 Hours*

*Maximum Marks : 100*

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***Note :** Answer **five** questions in all. Attempt at least **two** questions from each Section. All questions carry equal marks. The word limit for 20 marks question is **500** words and for 10 marks question is **250** words.*

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**Section—A**

1. What is Human Genetics ? Discuss the importance of Human Genetics in Molecular Biology. 20
2. What is Meiosis Cell Division ? Briefly describe various stages of meiotic cell division with suitable diagrams. 20

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3. Define Hardy-Weinberg's law. What are the different factors that influence change in gene frequencies ? Discuss. 20
4. Give a detailed account of causes of chromosomal aberrations in human. 20
5. Write short notes on any *two* of the following : 10+10
  - (a) Structure of DNA
  - (b) Phenylketonuria
  - (c) Inbreeding
  - (d) Down's syndrome

### Section—B

6. What is prenatal diagnosis ? Describe the techniques and indications of prenatal diagnosis. 20
7. Discuss the importance of mitochondrial DNA (mtDNA) and Y-chromosome polymorphism in studying the evolution of human populations. 20
8. What is Human Genome Project ? Briefly examine the applications of Human Genome Project. 20

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9. Discuss the importance of ethical and legal issues in Human Genetic Research. 20
10. Write short notes on any *two* of the following : 10+10
- (a) Genetic Epidemiology
  - (b) Genomics
  - (c) Sickle Cell Anemia
  - (d) Polymerase Chain Reaction (PCR)