

**May 2025**  
**M.Sc.**  
**Fourth Semester**  
**CORE – 11**  
**ANTHROPOLOGY**  
*Course Code: MANC 4.11*  
**(Human Population & Genetics)**

*Total Mark: 70*

*Pass Mark: 28*

*Time: 3 hours*

*Answer five questions, taking one from each unit.*

**UNIT-I**

1. Briefly discuss the history and development of human population genetics. 14
2. Define Mendelian population. Explain the key characteristics of a Mendelian population and how these can be applied in genetics. 2+6+6=14

**UNIT-II**

3. State the Hardy-Weinberg equilibrium. Explain with a hypothetical example. 14
4. “The Hardy-Weinberg equilibrium can be used as a baseline to study evolution.” Explain the statement with any example. 14

**UNIT-III**

5. Discuss the polymorphism of haemoglobin citing suitable examples. 14
6. Briefly discuss how dermatoglyphic can be used in understanding population variation with reference to diabetes and hypertension. 7+7=14

#### UNIT-IV

7. “The Hardy-Weinberg equilibrium assumes a constant population size. However, there may be variation in sex ratio or differential fertility.” How is this problem addressed in population genetics? 14
8. Using a mathematical model, demonstrate the maintenance of genetic polymorphism in a hypothetical population over two generations. 14

#### UNIT-V

9. Explain the types of mating patterns in human populations. Highlight the genetic consequences of consanguinity. 14
10. Elaborate on the significance and practical applications of eugenics in genetic counselling. 14

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