

- (b) Write a note on Ecological genetics.
- (c) Random and Non-random mating.
- (d) Bottleneck and founder effects.
- (e) Write briefly about application and exceptions of Hardy-Weinberg law.
4. Answer **any three** of the following questions: 10×3=30
- (a) Explain about Non-Mendelian inheritance.
- (b) Elaborate about relationship between sickle cell and malaria.
- (c) What are the different mechanisms for dynamics in Gene frequency? Describe about inbreeding and its consequences.
- (d) Describe about population structure and admixture in human population.
- (e) Write an essay on chromosomal theory of inheritance.
- (f) Discuss the association between blood groups and infectious disease.

2024

ANTHROPOLOGY

(Honours Core)

Paper : ANT-HC-5016

(Human Population Genetics)

Full Marks : 60

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Choose the correct answer : 1×7=7
- (a) Who forwarded the double helical model of DNA molecule ?
- (i) Darwin and Lamarck
- (ii) Mendel and Bateson
- (iii) Watson, Crick and Wilkins
- (iv) Barr and Bertram

- (b) Which of the following human disease is transmitted from the Vector Anopheles mosquito ?
- (i) Filaria
- (ii) Malaria
- (iii) Encephalitis
- (iv) Dengue
- (c) Modern population genetics has developed on the basis of a law, known as
- (i) Hardy-Weinberg law
- (ii) Mendel's law
- (iii) Law of Dominance
- (iv) Law of Inheritance
- (d) The total gene component in an organism is called
- (i) Genotype
- (ii) Phenotype
- (iii) Haploid
- (iv) None of the above
- (e) Hardy-Weinberg equilibrium can be attained if the following conditions obtain
- (i) Mutation must not affect the composition of the population
- (ii) Mating must be at random
- (iii) Selective forces must not play any role
- (iv) All of the above

- (f) Mixing of different population is also known as
- (i) Mutation
- (ii) Genetic drift
- (iii) Hybridization
- (iv) Selection
- (g) Genetic admixture occur when
- (i) Previously isolated populations interbreed resulting in a population that is descended from multiple sources
- (ii) It can occur between species such as within hybrid
- (iii) It can occur within species, such as when geographically distant individuals migrate to new region
- (iv) All of the above

2. Give short answers of the following questions: 2×4=8
- (a) Define co-dominance.
- (b) What do you mean by transient polymorphism ?
- (c) Define mutation.
- (d) Briefly mention about heritability.
3. Answer **any three** of the following questions: 5×3=15
- (a) Write about Mendelian inheritance in man.