3 (Sem–5/CBCS) ANT HC 1

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 Anapheles 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.

(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.
