3 (Sem–5/CBCS) ANT HC 1

2022

ANTHROPOLOGY

(Honours)

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. Answer ***any seven*** of the following questions : 1×7=7

   (a) In which year was the Hardy-Weinberg law proposed ?

   (b) Who propounded the 'Mutation theory' ?

   (c) What is the genotype of sickle cell or haemoglobin S ?

   (d) Who is regarded as the father of modern genetics?

(e) If the genotype consists of only one type of allele, what is it called ?

(f) What is genetic consanguinity also known as ?

(g) The malaria parasite is transmitted to humans by which mosquito ?

(h) Give an example of a sex-linked enzyme deficiency.

(i) Who first discovered that the actual number of human chromosomes is 46 ?

(j) Give an example of co-dominance.

(k) Give an example of holandric inheritance.

(l) By what term did Mendel refer to genes in his experiments ?

2. Give short answer of ***any four*** of the following questions : 2×4=8

(a) Differentiate between single factor and multifactorial inheritance.

(b) What is population genetics ?

(c) What is meant by pleiotropy ?

(d) What is point mutation ?

(e) Define genetic polymorphism.

(f) What are the phenotypes in the ABO blood group system ?

(g) What is gene flow ?

(h) Define Mendelian population.

3. Answer ***any three*** of the following questions : 5×3=15

(a) Explain how continuous inbreeding affects a small population.

(b) Write a note on penetrance and expressivity.

(c) Write briefly about the chromosome theory of inheritance.

(d) Write a note on positive and negative assertive mating.

(e) Distinguish between sex-controlled trait and sex-limited trait.

(f) Discuss the factors behind the inheritance of G6PD deficiency.

(g) What is meant by 'balance polymorphism' ?

(h) Explain cytoplasmic inheritance in man.

4. Answer ***any three*** of the following questions : 10×3=30

(a) State the Hardy-Weinberg Law. Explain the Hardy-Weinberg principles.

(b) What is single-factor inheritance? Discuss the inheritance patterns with suitable examples.

(c) What is genetic drift? Discuss genetic drift as a mechanism for dynamics in gene frequency.

(d) Elaborate non-Mendelian inheritance in humans.

(e) Explain how random and non-random mating influence population structure.

(f) Write briefly about important landmarks in the history of genetics.

(g) Discuss the association between blood groups and infectious diseases.

(h) What is mutation? How it affect on gene frequencies of polymorphic markers?
