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(c) Multi-locus inheritance

(d) Genetic association studies in human
diseases

(100)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5501

J

Unique Paper Code : 2152013601

Name of the Paper : (DSC): Human Population
Genetics

Name of the Course : **B.Sc. (H) Part-III**

Semester : VI

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll. No. on the top immediately on receipt of this question paper.
2. Attempt **any five** questions.
3. All questions carry equal marks.

P.T.O.

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1. Write an essay on concept of gene and DNA structure.
2. Discuss the landmarks in the history of human population genetics.
3. Explain the properties of autosomal dominant inheritance and provide suitable pedigrees as an example.
4. Describe the assumptions of Hardy-Weinberg equilibrium. Use suitable diagrams and examples.
5. What is the difference between genetic mutation and genetic polymorphisms? Describe the types of polymorphisms in human genome.

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6. Describe the concept of natural selection. How environment plays role in determining the outcome of natural selection?
7. Explain the concept of heterosis and inbreeding. How admixture and inbreeding affect genetic heterogeneity?
8. Describe the use of mtDNA markers in understanding the population variations in India.
9. Write short notes on any two of the following:
 - (a) HapMap project
 - (b) Selection-relaxation hypothesis

P.T.O.