

2010

M.Sc.

4th Semester Examination

ANTHROPOLOGY

PAPER—A/C16/BIO/S4

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Q. No. 1 and any three from the rest.

1. Answer any five of the following : 5×2
- (a) What is genetic polymorphism ?
 - (b) What is a species gene pool ?
 - (c) What is a mutant allele ?
 - (d) Define autozygosity.
 - (e) What is genetic drift ?
 - (f) Define Mendelian population.
 - (g) What is meant by genetic load ?
 - (h) What is Effective Population size ?

2. In a population of 2000 Caucasians, the phenotypic blood type frequencies are : Type O = 49%, Type A = 36% and Type B = 12% and Type AB = 3%. What are the frequencies of the A, B and O alleles in the population? 10
3. (a) What do you mean assortative mating? 5
(b) What is Inbreeding Co-efficient? 5
4. What are the major factors responsible for the changes of allele frequencies and genotype frequencies in a population? 10
5. (a) State the Handy-Weinberg Law. 3
(b) Derive and prove the Hardy-Weinberg equation. 7
6. The ability to taste PTC is a genetically determined trait. There are two alleles, T and t. The former being dominant over the latter. In a research study, the following data were recorded :

<i>Category</i>	<i>Number</i>
TASTER	978
NON-TASTER	132

Calculate :

- (1) the allele frequencies. 3
(2) the equilibrium frequencies. 3
(3) is the population evolving? 4