M.A./M.Sc. Examination, 2019

Semester–IV

Anthropology

Paper – XXV (Gr.-B)

(Human Genetics)

Time: 3 Hours **Full Marks: 40**

Questions are of value as indicated in the margin.

Answer Question No.**6**and***any three***from the rest.

1. What is banding? Illustrate the available banding techniques in human karyotyping. What do you understand by *translocation*? 2+5+3=10

2. What is molecular biology? Discuss on the available techniques often used in molecular biology. Write a brief note on the application of molecular diagnosis in biological anthropology. 2+5+3=10

3. Illustrate how protein synthesis occurs in normal eukaryotic cell. What is genetic code? 7+3=10

4. What is Hardy-Weinberg equilibrium principle? Write briefly on the factors accountable for Hardy-Weinberg equilibrium principle. After graduation, you and 19 of your closest friends (let's say 10 males and 10 females) charter a plane to go on a round-the-world tour. Unfortunately, you all crash land (safely) on a deserted island. No one finds you and you start a new population totally isolated from the rest of the world. Two of your friends carry (i.e. are heterozygous for) the recessive cystic fibrosis allele (c). Assuming that the frequency of this allele does not change as the population grows, what will be the incidence of cystic fibrosis on your island? 2+3+5=10

5. What is mutation? Differentiate spontaneous from induced mutation. Write a short note on mutagens. 2+3+5=10

6. Write short note on ***any two*** of the following: 5+5=10

   (a) Cri-du-chat.

   (b) Genetic drift

   (c) RNA

   (d) Selection

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