2124
B.Sc. (Hons.) Bio-Informatics
Fifth Semester
BIN-5004: Genetics and Evolution

Time allowed: 3 Hours

Max. Marks: 60

NOTE: *Attempt* <u>five</u> *questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.*

x-x-x

I.   Answer briefly:-

   a) Who is the father of genetics?

   b) Give names of Mendal's laws of Inheritance.

   c) Write the names of two Model organisms used in genetics.

   d) What is the gene?

   e) Difference between nucleoside and nucleotides?

   f) What is the genome?

   g) Lethal gene.

   h) Who used the technique of "Back Cross".

   i) Give names of two factors important for evolution.

   j) What is breeding out?

   k) Euchromatin.

   l) Write the names of two mutagenic agents.   (12x1)

UNIT - I

II.   a) Briefly describe the law of independent of assortment.

   b) Write a brief description of model organisms and their significance in genetics.
                                                                    (2x6)

III.   a) Write about the chromosomal theory of inheritance and its importance.

   b) Describe in brief about the viral genome.   (2x6)

IV.   a) Briefly describe co-dominance with examples.

   b) Write the main features of epistasis both dominant and recessive.   (2x6)

UNIT - II

V.   a) Explain the structure of nucleosome.

b) Write a short note on karyotyping and its significance.   (2x6)

VI. a) Explained in brief about the Hardy Weinberg laws.

b) Mentioned the two variations in chromosomal structures.   (2x6)

VII. a) Write a short note on natural selection.

b) What is the mutagenesis? Write only about two mutagenic agents.   (2x6)

x-x-x