

Exam.Code:0043  
Sub. Code: 18012

2125  
B.Sc. (Hons.) Bio-Informatics  
Fifth Semester  
BIN-5004: Genetics and Evolution

Time allowed: 3 Hours

Max. Marks: 60

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

*x-x-x*

- I. Give answer in a very short
- Who was Mendel?
  - Give names of Mendel's laws of Inheritance.
  - What is the prokaryotic model organism for experiment?
  - Give single term for the allelic interactions.
  - Difference between nucleoside and nucleotides.
  - Give an example of evolution.
  - Give the name of a disease caused by genetic mutation.
  - Why used the technique of "Test Cross"?
  - Give names of two factors important for evolution.
  - What is application of Hardy Weinberg law?
  - Duplicate gene.
  - Where is the nucleosome present? (12x1)

**UNIT - I**

- II. a) Briefly describe the law of dominance in pea plants.  
b) Write a brief description of incomplete dominance and their significance in genetics. (2x6)
- III. a) Write about the chromosomal theory of inheritance and its importances.  
b) Describe in brief about the prokaryotic genome. (2x6)
- IV. a) Briefly describe pseudo-alleles with examples.  
b) Write the main differences between essential and lethal genes. (2x6)

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**UNIT - II**

- V. a) Explain the structure of chromatin.  
b) Write a short note on giant chromosomes and its significance. (2x6)
- VI. a) Explained in brief about the Ames test for mutagenetic agents.  
b) Mentioned the two variations in chromosomal structures. (2x6)
- VII. a) Write a short note on animal breeding and its significance.  
b) What are the evolutionary genetics? Write the significances of study of evolutionary genetics. (2x6)

x-x-x