

2123
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. Answer briefly:-

- a) Co-dominance
- b) Viral genome
- c) Pseudo-allele
- d) Inhibitory genes
- e) Inversion
- f) Heterochromatin
- g) Lethal genes
- h) Nonsense mutation

(8x1½)

UNIT - I

II. a) Discuss Mendel's experimental design.

b) Explain the Principle of Independent Assortment.

(2x6)

III. a) Write a note on the Incomplete Dominance with suitable examples.

b) Elaborate on the role of essential genes with suitable examples.

(2x6)

IV. a) Discuss the role & significance of dominant & recessive Epistasis.

b) Explain the verification of segregates by test and back crosses.

(2x6)

UNIT - II

V. Write a note on:-

a) Giant Chromosomes

b) Hardy Weinberg Law

(12)

VI. a) What causes mutations? Discuss the Ames test for mutagenic agents.

b) Explain the chromosome banding patterns.

(7,5)

VII. a) Elaborate on the significance of changes in allelic frequencies.

b) Write a note on evolutionary genetics.

(2x6)

x-x-x