(i) Printed Pages : 3 Roll No. .....

(ii) Questions : 9 Sub. Code : 0155

Exam. Code : 0002

B.A./B.Sc. (General) 2nd Semester

(2042)

BOTANY

Paper–B Genetics

Time Allowed : Three Hours] **[Maximum Marks : 36**

Note :— Attempt **five** questions in all including Question No. 1, which is compulsory and selecting **one** question from each Unit.

1. (a) Choose the correct answer out of the given options :

(i) Alleles are similar in :

(a) Heterozygote (b) Homozygote

(c) Both (a) and (b) (d) Hybrid

(ii) Both the alleles are equally effective and produce independent effect in :

(a) Multiple alleles

(b) Codominance

(c) Incomplete Dominance

(d) Pleiotropic Genes

(iii) Chromosome theory of Linkage was given by :

(a) Mendel (b) Bateson

(c) Morgan (d) Punnet

(iv) Criss-Cross inheritance is seen in :

(a) Holandric genes (b) Hologenic genes

(c) Diandric genes (d) Autosomal genes

(v) Induced mutation was first obtained by :

(a) Muller (b) Morgan

(c) Bridges (d) Riddle

(vi) UV-Radiations lead to which type of mutation ?

(a) Pyrimidine dimer

(b) Deamination of bases

(c) Dehydration of bases

(d) Alkylation of bases $1\times6=6$

(b) Fill in the blanks :

(i) Pure Line term was coined by .....

(ii) ..... is the phenotypic Dihybrid ratio

(iii) Direct inheritance of some characters of the mother to the offspring through the cytoplasm of female gamete is called .....

(iv) Daltonism is an example of .....

(v) Acridines are example of ..... type of mutagens.

(vi) ..... is a base analogue chemical mutagen. $1\times6=6$

UNIT—I

2. (a) Explain Monohybrid cross.

   (b) Explain three laws of inheritance given by Mendel. 3×2=6

3. Discuss types of Linkage with suitable example. 6

UNIT—II

4. Discuss in detail the following :

   (a) Dominant Epistasis

   (b) Supplementary genes 3×2=6

5. Write in detail about incomplete dominance and Duplicate genes with example. 6

UNIT—III

6. Explain the following subparts :

   (a) Discuss Cytoplasmic inheritance with any one example.

   (b) Explain parallelism between chromosome and mendelian factors. 3×2=6

7. What is Sex-linked inheritance ? Explain its characteristics, with suitable example. 6

UNIT—IV

8. Discuss various characteristics and types of mutations. 6

9. Explain different types of repair system. 6