

(i) Printed Pages : 3

Roll No. ....

(ii) Questions : 9

Sub. Code : 

0	1	5	3
---	---	---	---

Exam. Code : 

0	0	0	2
---	---	---	---

**B.A./B.Sc. (General) 2<sup>nd</sup> Semester**

**1046**

**BOTANY**

**Paper : B-Genetics**

**Time Allowed : Three Hours]**

**[Maximum Marks : 36**

**Note :** Attempt **five** questions in all. Question No. **1** is compulsory and select **one** question from each Unit.

1. (a) MCQ :

(i) Mutations can be induced by :

- (a) Radiations      (b) Temperature  
(c) Chemicals      (d) All the above

(ii) The ration of complementary genes is :

- (a) 9 : 3 : 4      (b) 9 : 3 : 3 : 1  
(c) 9 : 7      (d) 15 : 1

(iii) Tendency of genes to be inherited together is known as :

- (a) Dominance      (b) Linkage  
(c) Crossing over      (d) None of the above

- (iv) When a gene hides the effect of other nonallelic gene is called :
- (a) Epistasis (b) Complementary genes
- (c) Incomplete dominance (d) Dominance
- (v) Phenotypic ratio of a dihybrid cross is :
- (a) 3 : 1 (b) 12 : 3 : 1
- (c) 9 : 3 : 3 : 1 (d) 15 : 1
- (vi) An important example of Pleiotropy is :
- (a) Hemophilia (b) Small pox
- (c) Sickle cell anaemia (d) Colour Blindness
- (b) Fill in the blanks :
- (i) TDF gene is present on \_\_\_\_\_ Chromosome.
- (ii) Duplicate genes produce  $F_2$  ratio of \_\_\_\_\_.
- (iii) Multistep reactions are controlled by \_\_\_\_\_ genes.
- (iv) The genotype for O blood group is \_\_\_\_\_.
- (v) A sudden heritable change in a living organism is called \_\_\_\_\_.
- (vi) Sex linked recessive disease Hemophilia is also known as \_\_\_\_\_ disease.  $12 \times 1 = 12$



## UNIT-I

2. Discuss Mendel's Law of Segregation. Give reasons for Mendel's success. 6
3. Write notes on :
  - (a) Linkage Groups
  - (b) Importance of Linkage. 3,3

## UNIT-II

4. What are Supplementary Genes ? Explain by giving examples. 6
5. Explain quantitative inheritance of skin colour in human beings. 6

## UNIT-III

6. What do you mean by Criss Cross Inheritance ? Explain this with reference to colour blindness. 6
7. Describe briefly the Mitochondrial inheritance in yeast. 6

## UNIT-IV

8. What are Mutagens ? Explain the working of either Physical or Chemical Mutagens. 6
9. Write notes on :
  - (a) DNA Damage
  - (b) DNA Repair. 3,3