

(i) Printed Pages :3]

Roll No.

(ii) Questions :14]

Sub. Code :

0	1	5	3
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Exam. Code:

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B.A./B.Sc.(General) 2nd Semester
1046
BOTANY
Paper - B : Genetics

Time : 3 Hours]

[Max. Marks : 36

Note :- Attempt five questions in all. Question No. 1 is compulsory 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 ratio 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 genes 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 |

(vii) 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. 12x1=12

UNIT-I

2. Discuss Mendel's Law of Segregation. Give reason 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 physical or chemical mutagens. 6
9. Write notes on :
 - (a) DNA Damage
 - (b) DNA Repair. 3,3