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(20517) Roll No.

B.Sc.(Bio-Tech.) -I Yr.

NS-3459

B.Sc. (Bio-Tech.) Examination, May 2017

Genetics

(B-105)

(New)

Time : Three Hours]

[Maximum Marks : 50

Note : All questions carry equal marks. Attempt any five questions.

1. Why Mendel selected pea plant for his study? Discuss the law of segregation in detail.

4 + 6

2. What are multiple alleles? Discuss the inheritance of blood groups in human beings.

10

3. Write detailed notes on the following:

5 + 5 = 10

(a) Transformation

(b) Transduction

P.T.O.

4. What do you mean by extra-chromosomal inheritance? Discuss the same giving suitable examples. 10

5. Discuss in detail the Hardy-Weinberg law describing all the assumptions considered there in. 10

6. Write short notes on the following : 2½ each

(a) Penetrance and expressivity

(b) Lethal factor

(c) Turner's syndrome

(d) Polytene chromosome.

7. Differentiate between the followings: 2 each

(i) Dominance and epistasis

(ii) Karyotype and idiogram

(iii) Complete and incomplete linkage

(iv) Test cross and back cross

(v) Heterochromatin and euchromatin

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8. What do you mean by sex determination and sex differentiation? Discuss the chromosome theory of sex determination in plants. 10
9. Write detail note on the following: 5+5=10
- (i) Lampbrush chromosome
 - (ii) Evolution of wheat or cotton
10. What are induced mutations? Discuss the role of induced mutations in crop improvement. 10

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