

**PD-546**  
**M.Sc. Biotechnology**  
**1st Semester Examination, Dec.-2020**  
**Paper-III**  
**Genetics and Cytogenetics**

Time: Three Hours]

[Maximum Marks: 80  
[Minimum Pass Marks: 29]

Note: Answer from **both** the sections as directed. The figures in the right-hand margin indicate marks

**Section-A**

1. **Answer the following questions:** 1X10

- (a) What is Test cross?
- (b) What is variation?
- (c) What is Aneuploidy?
- (d) What is duplication?
- (e) What is Heterosis?
- (f) What is the application of Ames test?
- (g) Write expand form of SOS.
- (h) What is "Ori" region in molecular biology.
- (i) Name any one RNA virus.
- (j) What is pilus?

2. **Answer the following questions:** 2X5

- (a) Write a note on trihybrid cross.
- (b) Write about Plasmogene.
- (c) Write a note on complex translocation.
- (d) Write about mutation frequency.
- (e) Write a note on Retrotransposon.

**Section - B**  
**Unit-I**

**Answer the following questions:** 15X4

3. Write an essay on Autosomal and sex linked inheritance.  
OR  
Write an essay on Linkage.

**Unit-II**

4. Write an essay on chromosomal aberrations.  
OR  
Write an essay on Robertsonian and B-translocation.

**Unit-III**

5. Write an essay on Mutagens.  
OR  
Write an essay on population genetics.

**Unit-IV**

6. Explain in detail on Genetic mapping.  
OR  
Write an essay on Genetic system of Yeast and Neurospora.