

Total No. of Questions : 8]

SEAT No. :

**P2262**

**[4932]-307**

[Total No. of Pages : 2

**M.Sc. - II**

**BOTANY**

**BO - 3.44 : Advanced Genetics & Molecular Biology  
(2013 Pattern) (Semester - III) (Credit System)**

*Time : 3 Hours]*

*[Max. Marks : 50*

*Instructions to the candidates:*

- 1) *All questions carry equal marks.*
- 2) *Attempt any five questions.*
- 3) *Draw neat labelled diagram wherever necessary.*

- Q1)** a) Give the characteristics of transposition & explain its Mechanism. [4]  
b) Describe molecular structure & centromere & telomeve in Eukaryote.[4]  
c) Write on satellite chromosome. [2]
- Q2)** a) Explain Molecular biology of T<sub>4</sub> phage infection. [4]  
b) Write on broad host range plasmids. [4]  
c) Comment on partitioning incompatibility. [2]
- Q3)** a) Describe Hardy-Weinberg principle & their implications. [4]  
b) Give structure & evolution of low molecular weight subunits genes & gliadin genes. [4]  
c) Comment on enzyme polymorphism. [2]
- Q4)** a) Explain the method of automated DNA sequencing & give its application. [4]  
b) Describe method of indirect diagnostics with linked genetic markes. [4]  
c) Write on restriction maps. [2]

*P.T.O.*

- Q5)** a) Discuss arrangement of chromatin fibers in Eukaryotic chromosome. **[5]**  
b) Explain mechanism of plasmid DNA replication. **[5]**
- Q6)** a) Describe systems of mating & explain random mating in population. **[5]**  
b) Write on physical mapping. **[5]**
- Q7)** a) Give the structure of prokaryotic transposable elements. **[5]**  
b) Comment on genetics of wheat & write on gluten proteins. **[5]**
- Q8)** a) Discuss single burst experiment. **[5]**  
b) Comment on Circular Chromosome Segregation. **[5]**

