

Total No. of Questions : 8]

SEAT No :

[Total No. of Pages :2

**P 2148**

**[5329]-203**

**M.Sc. - I**

**BOTANY**

**BO - 2.3 : Molecular Biology and Genetic Engineering  
(2013 Pattern ) (Semester-II) (Credit System)**

*Time : 3 Hours]*

*[Max. Marks : 50*

*Instructions to the candidates:*

- 1) *Attempt any five questions.*
- 2) *All questions carry equal marks.*
- 3) *Neat labelled diagrams must be drawn wherever necessary.*

- Q1)** a) Describe rolling circle model of DNA replication. [4]  
b) Explain packaging of genome in viruses. [4]  
c) Enlist types of DNA damage. [2]

- Q2)** a) Discuss the mechanism of protein synthesis in eukaryotes. [4]  
b) Comment on Arabinose operon. [4]  
c) Write on prokaryotic terminators. [2]

- Q3)** a) Give the steps involved in construction of recombinant DNA molecule.[4]  
b) Describe methods for selection of recombinants. [4]  
c) What is eukaryotic transcriptor factors. [2]

- Q4)** a) Explain techniques of DNA isolation & purification. [4]  
b) Discuss on handling of transformants in subsequent generation. [4]  
c) Write on western blotting. [2]

**P.T.O.**

- Q5)** a) Explain DNA repair mechanism. [5]  
b) What is  $\frac{1}{2}$  cot value? Give its significance. [5]
- Q6)** a) Explain the mechanism of positive & negative regulation of prokaryotic genes. [5]  
b) Write in detail any two vectors used in gene cloning. [5]
- Q7)** a) Explain mechanism of transcription in prokaryotes. [5]  
b) Enlist the names of enzymes used in genetic engineering. Explain any two in details. [5]
- Q8)** a) Give the applications of genetic engineering in lignin modification in plants. [5]  
b) What is c-DNA library? Give steps for preparation of c-DNA library. [5]

