Total No. of Questions : 8]

SEAT No. :

P2138

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M.Sc.

BOTANY

BO - 4.45 : Genetics, Molecular Biology and Plant Breeding - II

(2008 Pattern) (Old) (Semester IV)

Time : 3 Hours] *[Max. Marks : 80*

Instructions to the candidates:

1) ***Attempt a total of Five questions from the following, selecting at least two questions from each section.***
2) ***Answer to the questions from each section should be written in separate answer books.***
3) ***Figures to the right indicate full marks.***
4) ***Neat labeled diagram must be drawn wherever necessary.***

SECTION - I

Q1) Give techniques of in vivo and in vitro DNA amplifications. Write a note on its applications. **[16]**

Q2) a) Explain mechanism of physical mapping. **[8]**

b) Describe method of plaque hybridization. **[8]**

Q3) a) Describe procedure and applications of Northern blotting. **[8]**

b) Write an account of genome project. **[8]**

Q4) Write notes on any two of the following. **[16]**

a) Chloroplast DNA

b) DNA sequencing

c) Reverse transcription

P.T.O.

SECTION - II

Q5) Describe procedure for breeding of drought resistance and drought hardening. Add a note on a relationship between drought resistance any yield. **[16]**

Q6) a) Write an account of breeding with reference to oil yield. **[8]**

b) Describe importance of legume protein improvement. **[8]**

Q7) a) Write an account of breeding methods and its approaches. **[8]**

b) Describe method for the development of somaclonal variants. **[8]**

Q8) Write an explanatory notes on any two of the following. **[16]**

a) DNA finger printing.

b) Restriction mapping

c) Genetic variability and evolution.