

[This question paper contains 3 printed pages]

Your Roll No. :

Sl. No. of Q. Paper : **2946** **I**

Unique Paper Code : 2163582002

Name of the Paper : Crop Genetics and
Plant Breeding, DSE

Name of the Course : **B.Sc. (Applied Life
Science with
Agrochemicals and
Pest Management)**

Semester : IV

Time : 2 Hours **Maximum Marks : 60**

Instructions for Candidates :

- (a) Write your Roll No. on the top immediately on receipt of this question paper.
 - (b) Answer **four** questions in all. Question number **1** is compulsory.
 - (c) Draw well labelled diagram wherever is required.
- 1.** (a) Expand the following : 1×5=5
- (i) RFLP
 - (ii) GSI
 - (iii) NBPGR

P.T.O.

- (iv) IPR
- (v) MARS
- (b) Define the following terms : $1 \times 10 = 10$
 - (i) Self-incompatibility
 - (ii) Gene tagging
 - (iii) Germplasm
 - (iv) QTL mapping
 - (v) Inbreeding depression
 - (vi) Back cross
 - (vii) Plant variety protection
 - (viii) Linkage map
 - (ix) Chromosome manipulation
 - (x) Molecular markers
- 2. Write short notes on (attempt any **three**) : $3 \times 5 = 15$
 - (i) Male sterility
 - (ii) Induced mutation
 - (iii) Polyploidy
 - (iv) Green revolution
- 3. (a) What is molecular marker ? Discuss its use in plant breeding. 8
- (b) Define heterosis. Discuss molecular basis of Heterosis. 7

- 4. Differentiate between of the following (any **three**) : $3 \times 5 = 15$
 - (i) Mass selection and Pure line selection
 - (ii) Farmer's right and Breeder's right
 - (iii) GSI and SSI
 - (iv) RFLP and RAPD
- 5. Discuss selection methods for self-pollinated, cross-pollinated and vegetatively propagated crop plants. 15
- 6. (a) Describe following mapping populations: 8
 - F₂, NILS, RILS, BC
- (b) What are novel plant breeding tools? Discuss any two of them. 7
