

B.Sc. (Part—I) Semester—II Examination

SEED TECHNOLOGY (Voc.)

(Plant Breeding Methods for Crop Improvement and Seed Production)

Time : Three Hours]

[Maximum Marks : 80

- Note** :— (1) There are **SEVEN** questions in all.
 (2) Question No. 1 is compulsory and carries **8** marks.
 (3) Question number **2** to **6** carry equal marks.
 (4) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the Blanks :

- (i) The back cross with the recessive parent is called as _____ . $\frac{1}{2}$
 (ii) Every character in an organism is determined by a single pair of hereditary unit called as _____ . $\frac{1}{2}$
 (iii) _____ rice is a gamma-ray induced semidwarf mutant variety resistant to lodging. $\frac{1}{2}$
 (iv) The development of _____ depends on close interaction among host, pathogen and environment. $\frac{1}{2}$

(B) Choose the correct alternative (MCQ) :

- (v) From the following crops which is self pollinated ? $\frac{1}{2}$
 (a) Barley (b) Mustard
 (c) Almond (d) Beet
 (vi) Excess of _____ may cause overtillering in haploid rice : $\frac{1}{2}$
 (a) K (b) P
 (c) N (d) Ca

- (vii) The ratio of dihybrid cross is _____ : ½
- (a) 9 : 7 (b) 9 : 3 : 3 : 1
- (c) 1 : 2 : 1 (d) None
- (viii) Basic set of chromosome number in any species is _____ : ½
- (a) Diploid (b) Polyploid
- (c) Haploid (d) None

(C) Answer in **ONE** sentence :

- (ix) What is isolation in seed production ? 1
- (x) Define epistasis. 1
- (xi) A tomato variety obtained from a cross between Meeruti and Sioax through hybridization is known as _____ . 1
- (xii) Interspecific hybridization. 1

2. Comment on :—

- (a) Law of Independent assortment. 4
- (b) Applications of Pureline selection. 4
- (c) Centres of Origin. 4

OR

- (d) Merits and Limitations of plant explorations. 4
- (e) Clonal selection. 4
- (f) Types of plant interaction. 4

3. Define Mutation, describe in detail classification of mutation. 12

OR

- (a) Procedure of mass selection. 6
- (b) Procedure of mutation breeding. 6

4. Comment on :—
- (g) Autopolyploidy. 4
 - (h) Effects of diseases on crop plants. 4
 - (i) Protoplast isolation and fusion. 4

OR

- (j) Allopolyploidy. 4
- (k) Sources of disease resistance. 4
- (l) Embryo culture and its applications. 4

5. Comment on :—
- (m) Concepts of quality seeds. 4
 - (n) Genetic purity of varieties. 4
 - (o) Pollen viability. 4

OR

- (p) Uses of self incompatibility. 4
- (q) Development of testing of varieties. 4
- (r) Genetics of male sterility. 4

6. Comment on :—
- (s) Disease incidence. 4
 - (t) Pollination for hybrid seed production. 4
 - (u) Soil type. 4

OR

- (v) Insect Pest. 4
- (w) Hand emasculation. 4
- (x) Significance of hybrid seed production. 4

7. Describe in detail planning, organization and management of seed production programme. 12

OR

Give an account of seed production procedure in Wheat crop. 12

