

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 :— (i) There are **SEVEN** questions in all.

(ii) Question No.1 is compulsory and carries **8** marks.

(iii) Question Nos. **2** to **7** carry equal marks.

(iv) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the blanks :-

(i) A cross is made between two parents differing in two pairs of traits; such a cross is known as _____.

(ii) _____ may affect the structure and functioning of an organism. ½

(iii) _____ is an abnormal condition in plant produced by an organism or an environmental factor. ½

(iv) _____ are the way of survival of a particular plant species and the easiest means to carry life from one place to another. ½

(B) Choose the correct alternatives (MCQ) :-

(v) _____ was the first crop in which genetic male sterility was discovered.

(a) Groundnut

(b) Jowar

(c) Sugarcane

(d) Onion

½

(vi) By the application of _____ the competition of weeds should be avoided.

(a) Herbicide

(b) Insecticide

(c) Fungicide

(d) Nematicide

½

(vii) Sexual reproduction is first marked by the formation of _____.

(a) Embryo

(b) Flower

(c) Fruit

(d) None

½

(viii) Jagannath _____ is a gamma ray induced semidwarf mutant variety resistance to lodging.

(a) Rice

(b) Onion

(c) Tomato

(d) Wheat

½

(C) Answer in one sentence each :-

(ix) Define polyploidy. 1

(x) What is meant by plant introduction? 1

(xi) Which part of flower developed into fruit of the plant after fertilization? 1

(xii) What is the function of NBPGR? 1

2. Define gene interaction. Discuss in detail complementary and supplementary genes. 12

OR

(a) Plant introduction agency in India. 6

(b) Pureline selection. 6

3. Describe in detail mutation breeding. Explain its procedure, applications and limitations. 12
- OR**
- Define mass selection. Describe in detail procedure of mass selection, its merits and demerits. 12
4. Comment on :-
- (a) Somaclonal variation 4
 - (b) Crop Research institute 4
 - (c) Autopolyploidy. 4
- OR**
- (d) Advantages of breeding for disease resistance. 4
 - (e) Aneuploidy
 - (f) Anther culture 4
5. Comment on :-
- (a) Difference between seed and grain. 4
 - (b) Self incompatibility 4
 - (c) Flowering in crop plants. 4
- OR**
- (d) Pollen viability 4
 - (e) Factors affecting seed development 4
 - (f) System of release of variety. 4
6. Comment on :-
- (a) Climate for seed production. 4
 - (b) Compact area approach in seed production. 4
 - (c) Disease incidence 4
- OR**
- (d) Hand emasculation. 4
 - (e) Soil type 4
 - (f) Improvement of pollination for hybrid seed production. 4
7. Comment on :-
- (a) Harvesting and threshing of seeds. 4
 - (b) Agencies responsible for seed production. 4
 - (c) Seed plot technique of potato multiplication. 4
- OR**
- (d) Systems of seed production in India. 4
 - (e) Weed and Pest control. 4
 - (f) Production of hybrid potato seed. 4