AT–333

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

SEED TECHNOLOGY (Vocational)

(Hybrid Seed Production and Vegetable Seed Production)

Time : Three Hours] [Maximum Marks : 80

N.B. :— (1) **All** questions are compulsory.

(2) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the blanks :

(i) _____ means removal of stamens before they burst and shed their pollen. ½

(ii) _____ is a first generation hybrid between two single crosses. ½

(iii) _____ distance to be maintained between the seed crop and the contaminant. ½

(iv) Male sterile means producing no functional _____. ½

(B) Choose the correct alternative (MCQ) :

(v) A pureline is genetically :

(a) Impure (b) Pure

(c) Both (d) None ½

(vi) Self incompatibility means inability to set seed from application of pollen produced on the _____ plant.

(a) Same (b) Different

(c) Both (a) and (b) (d) None ½

(vii) Onion is an example of :

(a) Root crop (b) Bulb crop

(c) Leaf vegetable (d) None ½

(viii) Dryling is the removal of moisture to a point at which the rate deterioration from chemical and biological activity is :

(a) Up (b) Down

(c) Both (a) and (b) (d) None ½

(C) Answer in one sentence each :

(ix) What is pollination ? 1

(x) What is fertilization ? 1

(xi) What is seed drying ? 1

(xii) What is asexual reproduction ? 1

2. Explain in brief :

(a) Biochemical basis of Heterosis. 6

(b) Apomixis in Hybrid Sorghum. 6

OR

(p) Genetic of heterosis in Maize. 6

(q) Fixation of heterosis. 6

3. Comment on :

(a) Seed production of CMS line 'A'. 3

(b) Synchronisation methods of achievement. 3

(c) Hybrid seed production in Sunflower. 3

(d) Role of Marker gene. 3

OR

(p) Genetic male sterility. 3

(q) Hybrid seed production in Pigeon Pea. 3

(r) Disadvantages of Genetic male sterility. 3

(s) Seed production of Restorer line 'R'. 3

4. Discuss in detail floral biology seed production planning, field inspection, harvesting and threshing in *Sorghum*. 12

OR

Discuss in detail seed production planning, land and isolation requirement and agronomic practices in cotton. 12

5. Comment on the following :

(a) History of vegetable crop improvement 3

(b) Flowering habit in *Asparagus* 3

(c) Genetic male sterility in Brinjal 3

(d) Male gamete formation. 3

OR

(p) Self incompatibility in *Solanum* sp. 3

(q) Genetic male sterility in Musk melon 3

(r) Self incompatibility in *Lycopercicum* sp. 3

(s) Production of Artificial Seeds. 3

6. Comment on :

(a) Emasculation process 3

(b) Procedure of clonal selection 3

(c) Use of electric bees 3

(d) Hand pollination. 3

OR

(p) Equipment required for Hybridization 3

(q) Pollination methods in vegetables 3

(r) Pedigree selection method 3

(s) Backcross method. 3

7. Comment on the following :

(a) Classification of vegetable crops. 3

(b) Nursery management in onion. 3

(c) Land requirement for carrot. 3

(d) Objectives of vegetable seed production. 3

OR

(p) Seed harvesting of vegetables. 3

(q) Land requirement for cabbage. 3

(r) Methods of seed production in potato. 3

(s) Cultural practices of spinach. 3