

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

SEED TECHNOLOGY (VOC)

(Hybrid Seed Production and Vegetable Seed Production)

Time : Three Hours]

[Maximum Marks : 80

Note :—(1) **ALL** questions are compulsory.

(2) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the blanks :

- (i) A flower without Pedicel is called _____. ½
- (ii) Asexual reproduction in plants is called _____. ½
- (iii) Tomato is normally _____ pollinated. ½
- (iv) Pollen tube enters into the ovules through micropyle; this is known as _____. ½

(B) Choose the correct alternatives (MCQ) :

- (v) When pollination is brought by animals, it is called : ½
 - (a) Ornithophilly
 - (b) Zoophilly
 - (c) Chiroptrophilly
 - (d) None of these
- (vi) _____ is a root crop. ½
 - (a) Spinach
 - (b) Carrot
 - (c) Cabbage
 - (d) None
- (vii) Seed with two cotyledons is called : ½
 - (a) Monocotyledon
 - (b) Dicotyledon
 - (c) Both
 - (d) None
- (viii) _____ is an example of simple dry dehiscent fruit. ½
 - (a) Mango
 - (b) Custard Apple
 - (c) Pea
 - (d) Coconut

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

- (ix) Define apomixes. 1
- (x) What is polyembryony ? 1
- (xi) What is fertilization ? 1
- (xii) What is male sterility ? 1

2. Comment on the following :
- (a) Genetic basis of heterosis. 3
 - (b) History of concept of heterosis. 3
 - (c) Biochemical basis of heterosis in cotton. 3
 - (d) Fixation of heterosis. 3

OR

- (p) Physiological basis of heterosis in sunflower. 3
- (q) Apomixis in rice. 3
- (r) Inbreeding depression. 3
- (s) Exploitation of heterosis in sorghum. 3

3. Explain :

- (a) Role of Marker genes. 3
- (b) Cytoplasmic male sterility. 3
- (c) Seed production of restorer line 'R'. 3
- (d) Disadvantages of genetic male sterility. 3

OR

- (p) Seed production of CMS line 'A'. 3
- (q) Hybrid seed production in sunflower. 3
- (r) Genetic male sterility. 3
- (s) Synchronisation methods of achievement. 3

4. Discuss the following :

- (a) Land and isolation requirement. 3
- (b) Economics of hybrid seed production. 3
- (c) Floral biology of maize. 3
- (d) Importance of maintenance of varietal purity. 3

OR

- (p) Seed production planning in cotton. 3
- (q) Agronomic practices in sorghum. 3
- (r) Wild pollinators in sunflower. 3
- (s) Field inspection sorghum. 3

5. Comment on the following :
- (a) Genetic male sterility in Brinjal. 3
 - (b) Female gamete formation. 3
 - (c) Objectives of vegetative breeding. 3
 - (d) Flowering habits in spinach. 3

OR

- (p) Apomixis in crop improvement. 3
 - (q) Male sterility in Tomato. 3
 - (r) Production of artificial seeds. 3
 - (s) Flowering habits in cucurbits. 3
6. Define clonal selection. Explain in detail the method of collection of clones. 12

OR

Describe in brief pollination methods in vegetables. 12

7. Discuss methods of seed production planting cultural practices, breeding methods and seed production process in *Spinach* and *Trigonella*. 12

OR

Discuss land requirement, seedling production, breeding methods and harvesting process in Tomato. 12

