

B.Sc. Part—I (Semester—I) Examination
SEED TECHNOLOGY (VOC)

(Seed Development, Seed Physiology and Introduction to Plant Breeding)

Time : Three Hours]

[Maximum Marks : 80

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

(2) Draw neat and well labelled diagrams wherever necessary.

1. (A) Fill in the blanks :

- (i) When the seeds show presence of endosperm it is known as _____. $\frac{1}{2}$
- (ii) _____ maturity is the stage of seed when it attains its maximum dry weight. $\frac{1}{2}$
- (iii) Pollination achieved by agency of water is known as _____. $\frac{1}{2}$
- (iv) Seed coat of cotton showing fibres of commercial value are called _____. $\frac{1}{2}$

(B) Choose the correct alternative (MCQ) :

- (v) Presence of plenty of liquid causes seed dormancy in _____. $\frac{1}{2}$
- (a) Brinjal
- (b) Chilly
- (c) Tomato
- (d) Potato $\frac{1}{2}$
- (vi) Self pollination takes place in those plants which develop _____ flowers. $\frac{1}{2}$
- (a) Unisexual
- (b) Bisexual
- (c) Both (a) and (b)
- (d) None of the above $\frac{1}{2}$

(vii) Variety descriptors are the characters of the varieties described by _____.

- (a) Seed Corporation
- (b) Central Seed Committee
- (c) Breeder
- (d) None of the above

½

(viii) In peroxidase test reddish brown colour indicates _____ of seed.

- (a) Low activity
- (b) High activity
- (c) Both (a) and (b)
- (d) None of the above

½

(C) Answer in one sentence :

- (ix) What is variety descriptor ?
- (x) What is vegetative propagation ?
- (xi) What is physiological maturity of seeds ?
- (xii) What is hardseededness ?

1

1

1

1

2. Describe in brief structure and texture of seeds.

12

OR

Explain :

- (a) Phenol colour reactions of wheat
- (b) Sequential approach in testing.

6

6

3. Describe in detail synthesis of food reserves.

12

OR

Explain :

- (a) Chemical composition of seeds
- (b) Factors affecting on germination of seed.

6

6

4. Comment on :
- (a) Enzymatic activities during germination. 3
 - (b) Hardseededness 3
 - (c) Deterioration of seeds during storage 3
 - (d) Stimulators of germination 3

OR

- (p) Factors affecting physiological changes 3
- (q) Germination inhibitors 3
- (r) Role of endosperm in seedling establishment 3
- (s) Breaking of seed dormancy. 3

5. Comment on :
- (a) Scope and limitations of micropropagation techniques 3
 - (b) Seed longevity 3
 - (c) Seed pelleting 3
 - (d) Treatment to minimize seed ageing 3

OR

- (p) Invigoration treatments 3
- (q) Artificial seeds 3
- (r) Measurement of seed vigour 3
- (s) Significance of micropropagation techniques. 3

6. Explain :
- (a) Objectives of plant breeding 3
 - (b) Megasporangium 3
 - (c) Grow out test in cotton 3
 - (d) Apomixis 3

OR

- (p) Importance of variety descriptors 3
- (q) Polyembryony 3
- (r) Testing of cultivar genuineness 3
- (s) Microsporangium. 3

7. Discuss :

- (a) Cross pollination 3
- (b) Germination of pollen grain 3
- (c) Structure of flower 3
- (d) Chemical hybridizing agents 3

OR

- (p) Parts of plant used for propagation 3
- (q) Agencies for cross pollination 3
- (r) Double fertilization 3
- (s) Utility of self incompatibility in hybrid seed production. 3