

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) Seed with endosperm is known as _____. ½

(ii) _____ is the measure of the quality of seed and involves the viability of seed. ½

(iii) _____ is the mechanism to prevent germination during unsuitable ecological conditions. ½

(iv) Fusion of male gametes with femal gametes is known as _____. ½

(B) Choose the correct alternative (MCQ) :

(v) _____ is required by the germinating seed for metabolism. ½

- (a) Methane (b) Sulphur
(c) Oxygen (d) None of above

(vi) Pollination carried out by insect is known as : ½

- (a) Anaemophily (b) Entomophily
(c) Hydrophily (d) None of above

(vii) Meiosis is a process in which there is formation of _____ haploid spores. ½

- (a) One (b) Two
(c) Three (d) Four

(viii) Micropropagation was first put forth by _____ in 1960 in Orchid. ½

- (a) Flemming (b) Schenk
(c) Morell (d) Hildrebrandt

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

(ix) Define Autogamy. 1

(x) Define apomixis. 1

(xi) Define fertilisation. 1

(xii) What is the use of electrophoresis ? 1

2. Comment on :

(a) Texture of seed. 3

(b) Nuclear endosperm. 3

(c) Harvestable maturity of seeds. 3

(d) Sequential approach in testing. 3

OR

- (p) Peroxidase test. 3
- (q) Use of laboratory techniques. 3
- (r) Electrophoresis. 3
- (s) Diauxic development of fruit. 3
- 3. Describe in detail factors affecting seed germination and its implications. 12

OR

Explain :

- (a) Chemical composition of seeds. 6
- (b) Seedling abnormalities in dicot crop. 6
- 4. Describe in brief seed germination stimulators and inhibitors. 12

OR

Explain :

- (a) Seed dormancy and ecological implications. 6
- (b) Seed deterioration during storage. 6
- 5. Comment on :
 - (a) Seed longevity. 3
 - (b) Seed pelleting. 3
 - (c) Significance of micropropagation techniques. 3
 - (d) Artificial seed production. 3

OR

- (p) Seed vigour. 3
- (q) Treatment to minimize seed ageing. 3
- (r) Problems of seed dormancy. 3
- (s) Scope and limitations in micropropagation techniques. 3
- 6. Discuss :
 - (a) Nature and scope of plant breeding. 3
 - (b) DUS system. 3
 - (c) Structure of microsporangium. 3
 - (d) Development of female gametophyte. 3

OR

- (p) Structure of Megasporangium. 3
- (q) Autogamy. 3
- (r) Grow out test in cotton. 3
- (s) Objectives of plant breeding. 3
- 7. Explain :
 - (a) Bio-chemical basis of self incompatibility. 3
 - (b) Germination of pollen grain. 3
 - (c) Parts of plants used for propagation. 3
 - (d) Double fertilisation. 3

OR

- (p) Utility of male sterility in hybrid seed production. 3
- (q) Agencies for cross pollination. 3
- (r) Structure of flower. 3
- (s) Cytoplasmic sterility. 3