

**B.Sc. (Part-I) Semester—I Examination**

**SEED TECHNOLOGY (Vocational)**

**(Seed Development, Seed Physiology and Introduction to Plant Proceeding)**

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 :

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(i) In \_\_\_\_\_ the thallamus may grow around inferior ovary and become fleshy and edible.

(ii) Self pollination takes place in those plants which develops \_\_\_\_\_.

(iii) Phenol colour reaction has been used in \_\_\_\_\_ determination.

(iv) The expansion of seed coat into wings helps seed for \_\_\_\_\_.

(B) Choose appropriate alternative :

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(v) If only one megaspore contribute to form embryo, is known as \_\_\_\_\_ embryosac.

(a) Monosporic (b) Bisporic (c) Tetrasporic (d) None

(vi) When moisture content of cereal seeds is 11 to 13%, storage life of seed will be \_\_\_\_\_.

(a) 1 year (b) 2 years (c) 4 years (d) ½ year

(vii) DUS system is very popular in country like \_\_\_\_\_.

(a) America (b) India (c) Bangladesh (d) None

(viii) In \_\_\_\_\_ due to presence of plenty of liquid causing seed dormancy.

(a) Potato (b) Brinjal (c) Chilly (d) Tomato

- (C) Answer in one sentence :- 4
- (ix) What is hard seededness ?
  - (x) What is pollination ?
  - (xi) Who is responsible for describing of new variety ?
  - (xii) What is variety descriptor ?
2. Discuss :—
- (a) Structure of seed. 3
  - (b) Polyembryony. 3
  - (c) Peroxidase test. 3
  - (d) Development of seed. 3
- OR**
- (p) Use and limitation of laboratory techniques. 3
  - (q) Harvestable maturity of seed. 3
  - (r) Helobial endosperm. 3
  - (s) RFLP classification of fruits. 3
3. Describe in detail ripening and maturation processes of seed and comment on chemical composition of seed. 12
- OR**
- Describe in detail types of germination and seedling abnormalities in crop species. 12
4. Comment on :
- (a) Enzymatic activities during germination. 3
  - (b) Seed deterioration during storage. 3
  - (c) Causes of seed dormancy. 3
  - (d) Hard seededness. 3
- OR**
- (p) Respiratory pathway during germination. 3
  - (q) Germination inhibitors. 3
  - (r) Ecological implications in seed dormancy. 3
  - (s) Methods of breaking of seed dormancy. 3

5. What is seed vigour ? Discuss in detail its measurement and crop productivity. 12

**OR**

Discuss in detail micropropagation techniques with its significance, use, scope and limitations. 12

6. Discuss :

- (a) Development of female gametophyte. 3
- (b) Apomixis. 3
- (c) Importance of seed variety. 3
- (d) Objectives of plant breeding. 3

**OR**

- (p) Structure of Anther. 3
- (q) General principles of testing for cultivar genuineness. 3
- (r) Scope of plant breeding. 3
- (s) Allogamy. 3

7. Discuss :

- (a) Apomixis. 3
- (b) Self pollination. 3
- (c) Biochemical basis of self incompatibility. 3
- (d) Process of fertilization. 3

**OR**

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

