AW–1628

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