

AP-401

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

Note: (1) **ALL** questions are compulsory.
(2) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the blanks :

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- (i) If the fruit is formed from parts other than ovary such fruit is known as _____.
- (ii) Legume is a simple _____ fruit.
- (iii) In _____ test dark reddish brown colour indicates high activity.
- (iv) When the seed shows presence of _____ then they are known as albuminous.

(B) Choose appropriate alternative MCQ :

2

- (i) In _____ phenol colour reaction has been extensively used for varietal identification.
 - (a) Cotton
 - (b) Bajra
 - (c) Wheat
 - (d) None of the above

(ii) In simple fleshy fruit endocarp is hard and stoney as in _____.

- (a) Apple
- (b) Mango
- (c) Coconut
- (d) None.

(iii) Custard apple is a type of fruit :

- (a) Etario of drupe
- (b) Etario berries
- (c) Etario achene
- (d) None.

(iv) _____ in this seeds present plenty of liquid which cause seed dormancy.

- (a) Chilli
- (b) Brinjal
- (c) Tomato
- (d) None.

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

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- (i) What is inhibitors ?
- (ii) What is polyembryony ?
- (iii) What is physiological maturity of seed ?
- (iv) What is hard seededness ?

7. Comment on :

- (a) Use of chemical hybridising agent. 3
- (b) Heterostyly. 3
- (c) Growth of pollen tube during germination. 3
- (d) Male sterility in hybrid seed production. 3

OR

- (p) Double fertilization. 3
- (q) Parts of plants used for propagation. 3
- (r) Cross pollination. 3
- (s) Utility of self incompatibility. 3

2. What is endosperm ? Describe in detail types of endosperm. 12

OR

Discuss :

- (a) Use and limitation of laboratory techniques. 6
 - (b) Physiological and harvestable maturity of seed. 6
3. Explain the following :
- (a) Types of germination (any two). 3
 - (b) Seed ripening. 3
 - (c) Seedling abnormalities. 3
 - (d) Chemical composition of seed. 3

OR

- (p) Seed maturation process. 3
 - (q) Breakdown of carbohydrate during germination. 3
 - (r) Factors affecting on seed germination. 3
 - (s) Pattern of water absorption during seed germination. 3
4. Describe in detail respiratory pathway during germination. 12

OR

Discuss :

- (a) Germination stimulators and inhibitors. 6
- (b) Causes of seed dormancy. 6

5. Comment on :

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|---|---|
| (a) Treatment to minimize seed ageing. | 3 |
| (b) Artificial seed production. | 3 |
| (c) Problems of seed dormancy. | 3 |
| (d) Limitations in micropropagation techniques. | 3 |

OR

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| (p) Seed longevity. | 3 |
| (q) Significance of micropropagation techniques. | 3 |
| (r) Seed pelleting. | 3 |
| (s) Seed vigour. | 3 |

6. Discuss :

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|--|---|
| (a) Structure of megasporangium. | 3 |
| (b) DUS system. | 3 |
| (c) Polyembryony. | 3 |
| (d) Morphology of seed for variety identification. | 3 |

OR

- | | |
|--|---|
| (p) Development of male gametophyte. | 3 |
| (q) Autogamy. | 3 |
| (r) Methods of testing for cultivar genuineness. | 3 |
| (s) Grow out test in cotton. | 3 |