

G-4/402/21

Roll No.

M.Sc. IV Semester Examination, 2021**BIOCHEMISTRY****Paper II****(Seed Science Technology)**

Time : 3 Hours]

[Max. Marks : 80

Note : All questions are compulsory. Question Paper comprises of 3 sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.

SECTION A**1×8=8****(Objective Type Questions)**

Choose the correct answer :

1. Seed drying is very important to maintain its :
 (a) Viability and Vigour
 (b) Protein content
 (c) Oil content (d) Chemical composition
2. Which of the following vigour test method estimate decarboxylation activities ?
 (a) Leachate test (b) GADA test
 (c) ATPase (d) Exhaustion test

P.T.O.

3. Germination is inhibited by :

- (a) Red light (b) Blue light
 (c) IR light (d) UV light

4. Sugar found in germinating seed in large amount :

- (a) Maltose (b) Sucrose
 (c) Cellobiase (d) Lactose

5. Recalcitrant seeds are :

- (a) resistant to drying and freezing temperature
 (b) killed by drying and freezing temperature
 (c) both (1) and (2)
 (d) None of above.

6. Dehydrin belongs to LEA group

- (a) I (b) II
 (c) III (d) IV.

7. Which of the following is not true about synthetic seeds ?

- (a) Can be stored for a year without the loss of valuables
 (b) Easy to handle

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- (c) Can be directly sown in the soil like natural seeds
- (d) Need hardening in the green house
- 8.** Which of the following method is used for in-vitro germplasm conservation :
- (a) Cryopreservation (freeze-drying)
- (b) Cold storage
- (c) Low pressure and Low Oxygen Storage
- (d) All of these

SECTION B**6 × 4 = 24****(Short Answer Type Questions)**

Note : Attempt one question from each unit with internal choice.

Unit-I

- 1.** Hormonal cross talk of GA and ABA.

Or

Dormancy breaking chemical and its mechanism.

Unit-II

- 2.** Post germination events.

Or

ROS Metabolism.

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P.T.O.

Unit-III

- 3.** Difference between Orthodox seed and Non-orthodox seed.

Or

Recalcitrant seed and type.

Unit-IV

- 4.** Synthetic seed.

Or

Method to prevents cell damage during Cryopreservation.

SECTION C**12 × 4 = 48****(Long Answer Type Questions)**

Note : Attempt all questions.

Unit-I

- 1.** Write phase of seed development and accumulation of dessication related compound.

Or

What is dormancy ? Explain endogenous dormancy.

Unit-II

- 2.** What is germination ? Explain germination Phase I and Phase II.

Or

Hormonal regulation of germination.

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Unit-III

- 3.** What is longevity markers ? Explain role of MST and PIMT.

Or

What is desiccation tolerance ? Explain proteomics of desiccation tolerance.

Unit-IV

- 4.** What is Cryopreservation ? Explain steps of Cryopreservation.

Or

What is seed priming ? Explain techniques and biochemical aspects of seed priming.

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