Unit III

6. Describe the physiological and biochemical basis of fruit ripening in climacteric fruits. **16**

7. Write short notes on the following : **2×8=16**

(a) Hormonal regulation of senescence

(b) Discuss fruit physiology.

Unit IV

8. Describe different methods of post-harvest storage of fruits and their effects on fruit physiology. **16**

9. Discuss controlled atmosphere (CA) and modified atmosphere (MA) storage and their role in extending shelf life of fruits. **16**

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M. Sc. EXAMINATION, 2026

(Fourth Semester)

(Re-appear Only)

BOTANY

Plant Growth Regulators

Time : 3 *Hours*] [*Maximum Marks :* 80

Before answering the question-paper, candidates must ensure that they have been supplied with correct and complete question-paper. No complaint, in this regard will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

(Compulsory Question)

1. Explain the following : **8×2=16**

(i) What is the role of Cytokinin Oxidase (CKX) in cytokinin regulation ?

(ii) How does Abscisic Acid (ABA) mediate stomatal closure at the molecular level ?

(iii) How do Gibberellins (GA) break seed dormancy at the molecular level ?

(iv) How do environmental factors like light and temperature regulate seed germination ?

(v) Explain the role of ethylene in promoting senescence and abscission.

(vi) Differentiate between climacteric and non-climacteric fruits based on physiology.

(vii) What are the physiological causes of chilling injury in fruits ?

(viii) What physiological changes occur in fruits during post-harvest storage ?

Unit I

2. Discuss the mechanism of action of gibberellins with special reference to DELLA proteins and signal transduction pathway. **16**

3. Write notes on the following : **2×8=16**

(a) ACC synthase and its role in ethylene biosynthesis

(b) Mechanism of action of Brassinosteroids.

Unit II

4. Describe different types of seed dormancy and explain their physiological and molecular basis. **16**

5. Write notes on the following : **2×8=16**

(a) Enzyme activation during germination

(b) ABA-GA balance in germination.