ROLL NO.....

BOT. 203/21

II SEMESTER EXAMINATION, 2021

M.Sc. (BOTANY)

PAPER-III

PLANT PHYSIOLOGY

TIME: 3 HOURS **MAX.- 80**

MIN.- 16

Note: **The question paper consists of three sections A, B & C. All questions are compulsory.**
Section A- Attempt all multiple choice questions.
Section B- Attempt one question from each unit.
Section C- Attempt one question from each unit.

SECTION 'A' $2 \times 8 = 16$

MCQ (Multiple Choice Questions)

1. Loading of phloem means :

(a) Pouring of sugar into phloem

(b) Pouring of sugar into xylum

(c) Separation of phloem parenchyms

(d) None of the above

2. The most widely accepted theory for ascent of sap in trees is

(a) Root pressure theory

(b) Cytoplasmic theory

(c) Cohesion theory of Dixon and Tolly

(d) All of the above

SECTION 'C' $4 \times 10 = 40$

Long Answer questions (Word limit 400-450 words.)

UNIT-I

Q. 1. Explain membrane transport system.

OR

Describe the mechanism of organic solute transport in plant.

UNIT-II

Q. 2. Describe phespholipid signaling.

OR

Explain the sensor regulatory system in Bacteria.

UNIT-III

Q. 3. Write note on biotic stress in plants.

OR

Define metal toxicity.

UNIT-IV

Q. 4. Describe the properties and mechanisms of enzyme action.

OR

Write an essay on vermalization and its significance.

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3. Signal molecule fits the birding site on complementary receptor called -

(a) Specificity (b) Amplification

(c) Adaptation (d) None of the above

4. Which proteins are involve in transmitting signals -

(a) h-proteins (b) G-proteins

(c) Globulins (d) None of the above

5. Which of the following is not a type of signaling molecule?

(a) Insulin (b) Testosterone

(c) Thyroxin (d) Adenylate cyclase

6. During stress condition plant develops a stress hormone is-

(a) ABA (b) I,A,A (c) 2,4,D (d) Ethylene

7. The photoperiodic stimulus is perceived by -

(a) Leaves (b) Flamers

(c) Meristem (d) Buds

8. ''Lock and Key'' theory of enzyme proposed by -

(a) Kuhne (b) Koshland

(c) Sumner (d) Louis pasteur

SECTION 'B' $4 \times 6 = 24$

Short Answer Type Questions (Word limit 200-250 words.)

UNIT-I

Q. 1. Define Adoplast and Symplast translocation.

OR

Describe the Dixon and Jelly hypothesis of water transport.

UNIT-II

Q. 2. Explain role of cyclic nucleotides.

OR

Write note on G-protein.

UNIT-III

Q. 3. Write the effect of salinity stress on plants.

OR

Write note on freezing stess.

UNIT-IV

Q. 4. Define allosteric mechanism of enzyme action.

OR

Discuss photophysiology of light induced responses.