

G-3/302/21

Roll No.....

### III Semester Examination, April-2021

**M.Sc.**

**BIOCHEMISTRY**

**Paper II**

(Plant Physiology and Biochemistry)

Time : 3 Hours ]

[Maximum Marks : 80

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**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**

*(Multiple Type Questions)*

*Choose the correct answer :*

1. Proton gradient across the inner membrane of mitochondria is maintained by :
  - (a) ATPase
  - (b) Mitochondrial Matrix

P. T. O.

[ 4 ]

**SECTION 'B'**

**4×6=24**

*(Short Answer Type Questions)*

**Note :** Answer the following questions in 250 words.

Write short notes on :

1. Ion channels.

Or

Phytoremediation.

2. Photosystems.

Or

Cam pathway and its significance.

3. Auxins.

Or

Gibberellins.

4. PGR regulation.

Or

Programmed cell death.

[ 3 ]

5. Which of the following is NOT naturally occurring auxin ?

- (a) Indole 3-acetic acid
- (b) Indole 3-butyric acid
- (c) Phenyl acetic acid
- (d) 2, 4-D.

6. Which of the following plant hormone is responsible for seed germination ?

- (a) Auxin
- (b) Gibberellin
- (c) Ethylene
- (d) Absciscic acid

7. The pieces of dead cells due to apoptosis in plants deposited :

- (a) at bark
- (b) at vacuoles
- (c) Both of the above
- (d) Cleared and secreted

8. Which of the following chemical used to regulate cell division, differentiation and organogenesis in plants :

- (a) Polyamines
- (b) Polyketones
- (c) Polyhydroxils
- (d) Polyaldehydes

[ 2 ]

(c) Outer Membrane of the mitochondria

(d) Cytoplasm.

2. Voltage gates ion channels open and closed due to :

(a) The effect of voltage across the membrane

(b) The effect of solute concentration gradient across the membrane

(c) The effect of solvent concentration difference across the membrane

(d) All of the above

3. Oxygen producing cells contains :

(a) Photosystem I only

(b) Photosystem II only

(c) Photosystem I and II both

(d) None of the above

4. Plants which liberate oxygen at night usually used which of the following cycle in the cell ?

(a)  $C_3$

(b)  $C_4$

(c) CAM

(d) All of the above

[ 5 ]

SECTION 'C'

12×4=48

(Long Answer Type Questions)

**Note** : Answer the following questions in 500 words.

1. Describe molecular mechanism and regulation of K and Zn transport.

Or

Describe P-type and V-type ATPase.

2. Describe mechanism of photophosphorylation.

Or

Describe C3 and C4 Cycle in detail.

3. Describe synthesis and molecular mechanism of Cytokinin and abscisic acid.

4. Describe metabolism and regulation of pigment.

Or

Describe metabolism and regulation of nucleic acid.

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