

G-2/211/21

Roll No.

M.Sc. II Semester Examination, 2021**BOTANY****Paper III****(Plant Physiology)**

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. Which of the following type is a rapid type of absorption :

- (a) Passive absorption
- (b) Active absorption
- (c) Salt absorption
- (d) None of the above

2. In a non-turgid cell DPD is equal to the :

- (a) OP – WP
- (b) OP + WP
- (c) OP + TP
- (d) TP – WP

P.T.O.

3. Phytochrome is involved in :

- (a) Photosynthesis
- (b) Photorespiration
- (c) Photoperiodism
- (d) Phototropism

4. Which enzyme involved in the splitting of PIP_2 into IP_3 and DAG in the cell signaling :

- (a) Lipokinase
- (b) Phosphodiesterase
- (c) Phospholipase C
- (d) Catalase

5. If an enzyme system has lower value of K_m , their binding of substrate to its enzyme will be :

- (a) More strong
- (b) Inhibited
- (c) Less strong
- (d) None of the above

6. Which is produced during water stress that brings stomatal closer ?

- (a) Coumarin
- (b) Ethylene
- (c) Absciscic acid
- (D) Methylene

7. Which of the following is long distance signaling :

- (a) Endocrine signaling
- (b) Paracrine signaling
- (c) Synaptic signaling
- (d) All of them

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8. The term feed back refers to :

- (a) The effect of substrate on the rate of enzyme action
- (b) The effect of end product on the rate of enzyme action
- (c) The effect of enzyme concentration on the rate of enzyme action
- (d) The effect of pH on the rate of enzyme action.

SECTION B

4 × 6 = 24

(Short Answer Type Questions)

Note : Give your answer in 250 words.

Unit-I

1. Write note on phloem loading and unloading.

Or

Explain the cohesive force theory of water transport.

Unit-II

2. Explain calcium calmodulin pathway of signal transduction.

Or

Write note on secondary messengers.

Unit-III

3. Write the effect of salinity stress on plants.

Or

Write note on Heat Shock Proteins (HSP).

Unit-IV

4. Describe the enzyme inhibition.

Or

Write note on Cryptochrome.

SECTION C

12 × 4 = 48

(Long Answer Type Questions)

Note : Give your answer in 500 words.

Unit-I

1. Describe the active mechanism of solute transport.

Or

Describe the root microbes interaction and its role in nutrient uptake.

Unit-II

2. What is G-protein ? Explain any one G-protein linked pathway of signal transduction.

Or

Write note on receptors.

Unit-III

- 3.** Describe the physiological and biochemical responses in plants due to water stress.

Or

Write note on Biotic Stress.

Unit-IV

- 4.** Explain the Michaelis–Menton Equation and its significance.

Or

Write an essay on phytochrome.

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