Pages 1 to 3

D-6613

M.Sc. (I- Semester) Examination, 2020

Botany

(Physiology abd Biochemistry)

Time Allowed: **Three Hours**

Maximum Marks: **70**

Section-A

Note: Attempt any ten questions. Each question carries one mark.

Q.I Objective type questions (Max Marks - 10)

1. The largest family of cell surface receptor protein is ----------

2. An example of gaseous plant hormone is ----------

3. PAGE stands for ----------

4. Enzyme increases the rate of reaction without lowering the activation energy (State true/false) ----------

5. One half of the maximum reaction velocity is known as ----------

6. Pfr-Pr conversion is caused by ----------light

7. The availability of nutrients is sensed by microbes the process of----------

8. Naturally cytokinins are synthesized in plant tissues that are:

   (a) Senescent (b) Dividing rapidly

   (c) Store Food (d) None Dividing

9. Oxygen evolve during photosynthesis as a result of:

   (a) Photolysis of water (b) Chemolysis of water

   (c) Photolysis of CO_2 (d) None of the above

10. What is an apoenzyme?

    a) It is a protein portion of an enzyme

    b) It is a non-protein group

c) It is a complete, biologically active conjugated enzyme

d) It is a prosthetic group

11. In C3 and C4 plants, primary carboxylation takes place with the help of

a) PEP carboxylse and pyruvate carboxylase

b) RuBP carboxylase and PEP carboxylase

c) PEP carboxylase and RuBP carboxylase

d) RuBP carboxylase and pyruvate carboxylase

12. Arrange the following sequence of extracellular signaling in the correct order:

1) Transport of signal to a target

2) Start of signal transduction pathways

3) Signaling cell synthesize and release signaling molecules

4) Binding of the signal to the specific receptor

Response

a) 2, 3, 4, 1

b) 3, 1, 4, 2

c) 1, 2, 3, 4

d) 1, 3, 4, 2

Section B

Note: Attempt any five questions. Each question carries two marks.

Q.II Very short answer type questions. Answer in 25-30 words. (Max Marks-10)

1. Define Photoperiodism.
2. Define Geotropism.
3. Define Vernalization.
4. State first law of thermodynamics.
5. Name any two short-day and two long-day plants.
6. What are the main functions of plant growth regulators?
7. What is meant by stress in plant physiology?

Section C

Note: Attempt any five questions. Each question carries four marks.

Q.III Short answer type questions. Answer in 250 words (Max Marks-20)

1. Briefly describe the electron transport chain.
2. Draw well labelled diagram showing reproductive parts of plants.
3. Discuss the role of calcium ion as secondary messenger.
4. Give a brief account on synthetic hormones.
5. Explain the principle of protein sequence alignment.
6. Discuss the biological importance of circadian rhythm.
7. Briefly describe the tertiary structure of proteins.

Section D

Note: Attempt any three questions. Each question carries ten marks.

Q.IV Essay type questions. Answer in 500 words. (Max Marks-30)

1. Discuss the principle, instrumentation, working and applications of enzyme technology.
2. Give a detailed account on G-proteins and their role in cell-signalling.
3. Discuss the role of hormones in management of biotic and abiotic stress.
4. Describe the mechanism of regulation of flowering.

.