Exam. Code : 210004
Subject Code : 5464

M.Sc. Botany 4th Semester

STRUCTURE & METABOLISM OF PLANT HORMONES

Paper : BOTC-622

Time Allowed—3 Hours] [Maximum Marks—50

Note :— The candidates are required to attempt all the **eight** parts of Question No. **1** from Section A; **seven** parts of Question No. **2** from Section B and **three** parts of Question No. **3** from Section C. Be brief and to the point in your answer.

SECTION—A

1. Give short answers to each of the following questions not exceeding **4** lines : 8×1=8

   (i) Name naturally occurring cytokinins in plants.

   (ii) Why there are so many GAs ?

   (iii) What are the sites of auxin synthesis in plants ?

   (iv) What is the structure of Abscisic acid ?

   (v) Name the inhibitors of brassinosteroid biosynthesis.

   (vi) Enlist the inhibitory effects of jasmonates.

   (vii) List at least 3 physiological roles of ethylene.

   (viii) What are the inhibitors of ABA ?

SECTION—B

2. Give answers to any **seven** of the following questions. Answer to any **one** of the following should not exceed **two** pages. 7×3=21

   (i) What do you understand by the term "hormonal homeostasis"?

   (ii) How are ABA levels regulated ?

   (iii) How are plant hormones produced by other micro-organisms ?

   (iv) What are the physiological roles of brassinosteroids ? steroids ?

   (v) What are the synthetic compounds with cytokinin-like activity ?

   (vi) Write about the bioassay of ethylene.

   (vii) How were jasmonates discovered ?

   (viii) Write about the structural diversity of auxins.

   (ix) How is GA levels regulated in higher plants ?

   (x) Write about the triple response of ethylene along with its some other physiological roles.

SECTION—C

3. Give detailed answers to any **three** of the following questions. Answer to any one of the following questions should not exceed **4** pages : 3×7=21

(i) Write about :

(a) Physiological roles of Jamonates. 3

(b) Expression of bacterial genes in higher plants. 4

(ii) (a) How are the levels of castasterone and brassinolide regulated ? 4

(b) Write about the terpenoid pathway in gibberellins. 3

(iii) How was auxin discovered ? What are the physiological roles of IAA and how is it synthesized in higher plants ? Also write about the regulation of IAA levels. 7

(iv) (a) Write about the structure and occurrence of ABA in plants and fungi. 3

(b) Discuss about the biosynthesis of ethylene in higher plants. 4

(v) (a) Differentiate between hormone and plant growth regulator. 3

(b) Write about the biological functions and bioassay of cytokinins. 4