

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 : $8 \times 1 = 8$

- (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 : $3 \times 7 = 21$

(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