THE OPEN UNIVERSITY OF SRI LANKA
B.Sc. DEGREE PROGRAMME
BOTANY – LEVEL 05
FINAL EXAMINATION 2012/2013
BOU3102/BOE5102/BTU3103/BTE5103-PLANT GROWTH AND DEVELOPMENT
DURATION :TWO (02) HOURS.

Date: 27th May 2013 Time: 9.30 a.m. – 11.30 a.m.

Answer any four (04) of the following questions.

01. Brassinosteroids are a new group of plant hormones that has been recognized recently.

a) List the key requirements in the structure for the activity of this group of hormones.

b) Describe the physiological effects they are known to elicit in plants.

c) List the prospective uses of this group of hormones in agriculture.

02. a) Briefly describe how abscisic acid closes stomata in response to water stress.

b) Explain how the regulation of abscisic acid levels in plants takes place.

c) "Abscisic acid inhibits precocious germination and vivipary" Comment on this statement.

03. a) Briefly describe how gibberellins were discovered.

b) Write down in sequence the names of the compounds (structures not required) involved in the probable pathway of GA biosynthesis.

c) Using a labeled diagram, briefly discuss the model for mechanism of ethylene action.

04. a) Name and briefly describe three important responses in plants to blue light.

b) Explain the criteria used to distinguish specific blue-light responses from other responses such as phytochrome responses.

c) Explain the "shade avoidance response" shown by some plants and discuss its significance to plants.

05. Write short notes on the following.

a) Important functional domains of phytochrome.

b) Role of hormones in flower and leaf senescence.

c) Bud dormancy in temperate plants.

06. a) What is meant by 'floral evocation"?

b) A short-day plant has a critical day length of 16 hours. State whether the plant will flower or not under the following light and dark cycles. For each case, give reasons.

i. 15 hours of light and 9 hours of darkness

ii. 09 hours of light and 15 hours of darkness

iii. 09 hours of light and 15 hours of darkness with 10 minutes of red light in the middle of the dark period.

iv. 09 hours of light and 15 hours of darkness with 10 minutes of red light followed by 10 minutes of far-red light in the middle of the dark period.