



THE OPEN UNIVERSITY OF SRI LANKA

B.Sc. DEGREE PROGRAMME

BOTANY –LEVEL 05

FINAL EXAMINATION – 2006/2007

BTU 3103/BTE 5103/BTI 5103 – PLANT GROWTH AND DEVELOPMENT

DURATION : TWO AND A HALF (2 ½ HOURS)

DATE : 07th June 2007

TIME: 2.00 p.m. – 4.30 p.m.

ANSWER ANY FOUR (04) OF THE FOLLOWING QUESTIONS.

01. (a) What is “bakanae disease” and what is its relationship to the discovery of gibberellins?
- (b) With the help of fully labelled diagrams describe the events that take place during the germination of a barley grain.
- (c) List the plant responses influenced by gibberellin. What are the common effects of auxins and gibberellins on plant growth and development?
- (d) Describe the commercial uses of gibberellins.
02. (a) What are auxins?
- (b) Briefly describe the experiments and the inferences which led to the discovery of auxins.
- (c) What is the explanation for the phenomenon of apical dominance?
- (d) How is the knowledge of apical dominance put into use in agriculture and horticulture?
03. Describe the following.
 - (a) Biosynthetic pathway of auxin from Tryptophan in plants.
 - (b) Effect of various factors influencing vernalisation.
 - (c) Zygotic embryogenesis of dicotyledons.

04. (a) Differentiate between dormancy and quiescence.
- (b) A seed is planted and watered but fails to germinate. What are the possible reasons for its failure to germinate?
- (c) What treatments are employed to break the dormancy of seeds?
- (d) Explain briefly the significance of seed dormancy.
05. (a) What is abscission?
- (b) "Abscission is controlled by hormones" Comment on this.
- (c) Describe the physiological and biochemical changes taking place during fruit ripening.
- (d) Based on your knowledge of ethylene biosynthesis, briefly describe how the conditions of fruit storage delay ripening during storage.
06. Write short notes on the following.
- (a) Role of Phytochrome in the development of dicot seedlings.
- (b) Accommodation growth in water plants.
- (c) Cellular mechanism by which auxin is transported from shoot apex to the roots.

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