



THE OPEN UNIVERSITY OF SRI LANKA  
B.Sc./B.Ed. DEGREE PROGRAMME BOTANY  
BTU 2201/BTE 4201 – PLANT PHYSIOLOGY – LEVEL 04  
ASSESSMENT TEST – (NO BOOK TEST ID)

DURATION: ONE (01) HOUR

Registration No.....

DATE: 3<sup>rd</sup> March 2007

TIME: 11.00 a.m. – 12.00 noon

PART - 1

Answer all questions in the spaces provided.

01. i). What is the most appropriate definition of growth?

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ii) The three events at the cellular level that form the basis of growth and development are :

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iii) Weight of a plant or a plant part is the parameter often used to measure growth. Explain why the dry weight measurements are preferred over fresh weight measurements for this purpose.

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iv) Draw the typical sigmoid growth curve and indicate on it the different phases of growth.

02. i) In nature, auxins cause an ovary to develop into a fruit following fertilization and the formation of seeds. How do horticulturists make use of this phenomenon in fruit production?

ii) Why do you suppose the presence of one rotten piece of fruit in a container promotes the rapid ripening and decay of all the fruits in the container.

iii) Some plants which have a compact, rosette type of growth suddenly bolts and flowers with extremely long stems. What hormone would you suspect to be responsible for this phenomenon?

iv) If leaf yellowing of tobacco could be induced, an increased number of leaves could be harvested at one time. Which hormone should be used to produce yellowing of leaves?

v) The longevity of cut flowers such as Carnation is reduced due to the production of this hormone in their tissues. Inhibitors of this hormone can be used to keep the cut flowers for a longer period.

a. What is the hormone involved?

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b. What is the inhibitor that can be used for this purpose?

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vi) A new group of naturally occurring hormones in plants, have been identified in addition to the five groups already known.

a. Name the new group of hormones.

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b. Give three physiological effects of this group of hormones

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03. A short-day plant has a critical photoperiod of 14 hours of day light. State whether it will flower or not under the following conditions, and give reasons.

i) 15 hours of day light followed by 9 hours of darkness.

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ii) 12 hours of day light followed by 12 hours of darkness.

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iii) 13 hours of day light followed by 11 hours of darkness

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v) 12 hours of day light followed by 12 hours of darkness, with a flash of red light at hour 18 followed by a flash of far-red light.

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vi) 10 hours of day light followed by 14 hours of darkness with a flash of red light at hour 17.

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