THE OPEN UNIVERSITY OF SRI LANKA

B.Sc./B.Ed. DEGREE PROGRAMME 2009/2010

BOTANY –LEVEL 05

ASSESSMENT TEST I –(OPEN BOOK TEST)

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

DURATION : ONE (01) HOUR

Reg. No.....

DATE : 27th September 2009 **TIME: 3.00 P.M. – 4.00 P.M.**

No of Questions - 03

No. of Pages: - 03

ANSWER ALL QUESTIONS ON THE SPACE PROVIDED.

01. State whether the following statements are true or false.

a) Ethylene is produced in large amounts by tissues undergoing senescence or ripening (.....)

b) Ethylene is frequently produced when high concentrations of auxins are supplied to plant tissues (.....)

c) S – adenosylmethione (SAM) is an intermediate in the conversion of methionine to ethylene in ethylene biosynthesis (.....)

d) The enzyme that catalyses the oxidation of ACC (1 –amino cyclopropane-1-carboxylic acid) to ethylene is known as ACC synthase (.....)

e) Cytokinins have the ability to stimulate cell elongation in combination with auxin. (.....)

f) Chemical thining is done to increase the total marketable yield by increasing the size of the remaining fruits. (.....)

g) Rooting of stem cuttings is one of the main uses of Gibberellins (.....)

h) Stems are more sensitive to auxin than roots. (.....)

i) Increase in the yield of barley malt is achieved

through GA-enhanced effects on starch digestion (.....)

j) Climacteric fruits ripe better after plucking (.....)

k) Proliferation and swelling of cells which is known as hypertrophy is under the influence of auxin. (.....)

l) K^+ are pumped out of guard cells in water – stressed situations (.....)

02. a) Briefly describe the chemical structure of ethylene.

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b) "Ethylene acts as a autocatalyst" Explain this statement.

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c) Briefly describe the role of ethylene in regulating the accommodation growth in water plants.

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d) What are the <u>two(2)</u> major ways of regulating ethylene levels in plants?

i) .....

ii) .....

e) Name <u>two(02)</u> ethylene releasing compounds which are used commercially

i) .....

ii) .....

f) What is the significance of using ethylene – releasing substances?

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03. a) List two (02) naturally occurring auxins in plants.

i) .....

ii) .....

b) What are antiauxins?

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c) Give three (03) functions of IAA conjugates.

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d) "Some synthetic auxins are very effective weed killers at high concentrations" Explain this statement.

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e) 2, 4 – D is commonly used to control broad leaf weeds and grasses. What is the reason for this?

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f) Briefly explain the IAA – induced cell wall elongation.

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