THE OPEN UNIVERSITY OF SRI LANKA
B.Sc./B.Ed. DEGREE PROGRAMME
BOTANY – LEVEL 05
FINAL EXAMINATION – 2019/2020
BOU3102/BYU5302/BYE5302 – PLANT GROWTH AND DEVELOPMENT
DURATION: TWO (02) HOURS

Date : 12th January 2019 **Time: 9.30 a.m. – 11.30 a.m.**

ANSWER ANY FOUR (04) OF THE FOLLOWING QUESTIONS.

01. (a) What are synthetic auxins?

What are their uses?

(b) Give a diagrammatic representation of the pathways of auxin biosynthesis in plants (structural formulae are not required)

What is the most predominant pathway?

(c) Briefly explain how phytohormones help the development of parthenocarpic fruits.

(d) State the significance of bound auxins to plants.

02. Discuss the following:

(a) Physiological role of gibberellins in plants.

(b) Factors influencing vernalization.

03. (a) Define the term "senescence"

(b) List the various types of senescence seen in plants.

(b) Briefly describe the physiological and metabolic changes that take place in senescing organs.

(d) "Biologically senescence followed by death of plants have various advantages". Discuss this statement.

04. (a) What are the two types of germination patterns exhibited by flowering plants?

Explain each type briefly.

(b) Briefly explain the three basic stages of the seed germination process.

(c) Discuss the effects of plant hormones on seed germination.

(d) Briefly explain how the etiolated morphology of plants promote their survival during germination and early seedling development.

05. Write short notes on the following.

(a) Commercial uses of ethylene.

(b) Blue light responses in plants.

06. (a) What is a photoperiod?

(b) Give the major differences between photoperiodism and vernalization.

(c) A short day plant with a critical night length of 15 hours is cultivated for its flowers. Giving reasons, state whether this plant would flower or not when exposed to the following conditions.

(i) 16 hours of darkness.

(ii) 20 hours of darkness but given a flash of red light after 8 hours of darkness

(iii) 20 hours of darkness but given a flash of red light followed by a flash of far-red light after 08 hours of darkness.

(iv) 10 hours of darkness and given a flash of red light during this period.

(v) 12 hours of darkness.