UVA WELLASSA UNIVERSITY OF SRI LANKA
FACULTY OF ANIMAL SCIENCE & EXPORT AGRICULTURE

BSc in Export Agriculture
BSc in Tea Technology and Value Addition
BSc in Palm & Latex Technology and Value Addition
First Year First Semester Examination – July/August 2019

Principles of Crop Physiology (EAG 114-2)

Section III – Essay Questions

Instructions:

Answer only **two (02)** questions in the given booklet.
No. of questions : Three (03)
No. of pages : Two (02)
Time : One (01) hour
Total marks allocated : 50%

01. (I) Briefly describe the steps/mechanism of phloem transport

(20 Marks)

(II) Discuss the factors affecting phloem transport

(30 Marks)

02. (I) a. Rice varieties A and B are grown in two different locations and daily mean temperature experienced by each variety at different time intervals from planting is given below.

Days from planting	Daily Mean Temperature (T) $^{\circ}$C	
	Variety A	Variety B
0-10th day (10 days)	25	22
11th - 20th day (10 days)	28	24
21st – 30th (10 days)	26	25

If the thermal duration (θ) required to complete a particular development event is 450 d $^{\circ}$C (degree days) for both cultivars, how many calendar days will it take from planting to complete that development event for variety A and B separately. Note: Tb = 5 $^{\circ}$C

(25 marks)

b. If a rice variety requires 500 d $^{\circ}$C (degree days) to reach panicle initiation stage from germination, find the duration in days.

Note: Tb = 5 $^{\circ}$C and daily mean temperature (T) = 30 $^{\circ}$C

(15 marks)

(II) Briefly explain the importance of expressing the duration of a crop in thermal duration/time instead of calendar days.

(10 marks)

03. Discuss the factors that affect on respiration.

(50 marks)

[**End of section III**]