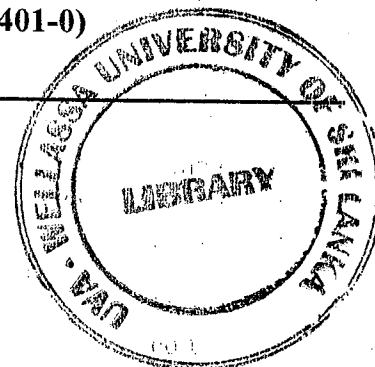


UVA WELASSA UNIVERSITY OF SRI LANKA
FACULTY OF ANIMAL SCIENCE & EXPORT AGRICULTURE



BSc in Export Agriculture
BSc in Palm & Latex Technology and Value Addition
BSc in Tea Technology and Value Addition
Fourth Year First Semester Examination – June/ July 2017

Experimental Designs and Analysis (EAG 401-0)
Section II- Essay Questions



Instructions:

Answer all questions in the given booklet.

No. of questions : Two (02)

No. of pages : Two (02)

Time : One (01) hour

Total marks allocated : 50%

Candidates are allowed to use calculators

01. An experiment is to be conducted in a plant house to study the effect of 5 hormone mixtures on length of leaves of a foliage species. Experimental units are pots filled with charcoal as the medium and a single plant established in each pot.
- (I) If the charcoal is of the same origin and, pots and planting material are uniform, suggest an appropriate design for the study. (01 mark)
- (II) Give the layout of the design for part (I). (02 marks)
- (III) Give the break-down of the ANOVA (source and degrees of freedom only). (04 marks)
- (IV) If the charcoal available is from five (05) different sources suggest an appropriate design for the study. (02 marks)
- (V) Give the layout of the design for part (IV). (03 marks)
- (VI) Give the break-down of the ANOVA (source and degrees of freedom only). (04 marks)
- (VII) Suppose charcoal available is from five (5) different sources and five students are expected to look after the experiments. Suggest an appropriate design for the study. (02 marks)

(VIII) Give the layout of the design for part (VII).

(03 marks)

(IX) Give the break-down of the ANOVA (source and degrees of freedom only).

(04 marks)

02. A study was carried-out to compare the performance (efficiency) of four (04) types of tractors (A, B, C and D) of same capacity. The performances were studied under four (04) fuel types and using four (04) operators. Since there were four (04) treatments (type of tractors), studied under four (04) fuel types (F1, F2, F3 and F4) and using four (04) operators (O1, O2, O3 and O4) a 4x4 LSD set-up was used. The layout and the performance values recorded are given below.

	F1	F2	F3	F4
O1	11 (B)	11 (C)	15 (A)	7 (D)
O2	17 (C)	18 (A)	10 (D)	10 (B)
O3	22 (A)	10 (D)	11 (B)	13 (C)
O4	14 (D)	11 (B)	15 (C)	19 (A)

(I) Construct the ANOVA table for above situation.

(15 marks)

(II) Interpret the ANOVA table.

(10 marks)

[End of Section II]

