11-4TH-EAG 441-2.

Uva Wellassa University

Faculty of Animal Science & Export Agriculture

B.Sc in Export Agriculture

End Semester Examination – Feb/ March 2011

Year IV Semester I

New Product Development (EAG 441-2)

Instructions

Answer all questions.

No. of questions : Two (02)
No. of pages : Two (02)
Time : 01 hour
Total marks allocated : 50%

Index No :.....

PART III – ESSAY

1. New product development process is an important and integral part for long survival of a company in the dynamic market. Therefore, product development process must be carried out systematic as well as scientific manner. Hence, explain the important phases associated with the product development process.

(25 Marks)

2. Designs of experiment are playing an important role in the product development process. A manufacturer has conducted an experiment with two factor factorial design with three variables at two levels with the view to extract as much as starch from a particular tuber. The variables and their levels are as follows.

Variable	Low level	High level
Time of blending – minutes (a)	10 (a_0)	20 (a_1)
Speed of blending –RPM (b)	500 (b_0)	800 (b_1)
Time for sedimentation - min (c)	15 (c_0)	30 (c_1)

25

After conducting the experiment, under mention amount of starch were yielded with respect to the design.

Treatment combination	Weight of starch (g)
$a_0b_0c_0$	87
$a_1b_0c_0$	88
$a_0b_1c_0$	82
$a_1b_1c_0$	83
$a_0b_0c_1$	86
$a_1b_0c_1$	89
$a_0b_1c_1$	83
$a_1b_1c_1$	84

I. Draw an experimental design for the trial

II. Calculate sum of square of main effect and interactions

III. Draw an ANOVA table and determine the significantly different variables
Table value $F_4^1 = 7.71$, Sum of square of effect = $\frac{(\text{contrast})^2}{2^f}$

F = Number of factors

(25 Marks)