OBAFEMI AWOLOWO UNIVERSITY, ILE-IFE
FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL FOUNDATIONS AND COUSELLING
2008/2009 M.A/M.Ed. Degree Harmattan Semester Examinations

EFC 605: STATISTICS IN EDUCATION

Instruction: Answer all Questions   Time Allowed: 3 Hours

1.   15 children were given a lesson in spelling a list of 20 words. 4 were criticized each time they misspelled a word; 5 others were praised each time they spelled a word correctly and the remaining 6 were given neither criticism nor praise. On a test of 20 words given a month later, the scores of the children were as follows:

Criticism: 9   12   10   13

Praise: 14   18   17   16   15

Neither: 10   11   15   13   12   9

   a.   Test the null hypothesis of no significant difference at alpha equals 0.05
   b.   Conduct a Scheffe test to determine which of the pairs of means is significantly different.

2a.   Several students majoring in Psychology, Architecture and Engineering obtained the following scores on a test of Mechanical Drawing:

Psychology: 6   4   5   3   5   7
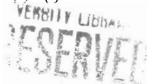
Architecture: S   6   8   7   9   4   6   10

Engineering: 7   9   8   6   5   7   8

Compute a measure of association between the test scores and major area of study.

2b.   The following is a 2-Way ANOVA Summary Table

Source	S.S	df	MS	F
r	1.6	1	a	0.355
c	145.1	b	48.4	c
rc	55.4	3	d	4.314
bg	e	7		
wg	144.4	f	4.512	
total	349.5	39		

Find (a) – (f) in the Table.

3a. Distinguish between dependent and independent variables.

b. The following are Arithmetic test scores and a Final exam scores for 10 students in an Elementary Statistics Course:

Arithmetic Test:	9	11	10	14	12	13	15	16	14	12
Final Exam:	10	9	12	16	14	13	16	18	17	15

(i). Find 'a' and 'b' in the least squares prediction equation $Y = a \times bX$

(ii). Predict the Final exam score of a person whose Arithmetic test score was 15.

(iii). What is the error of estimate, given:

$$S_e = S_y \sqrt{1 - r^2_{xy}}$$

(iv). What is its purpose?

(v). Draw the graph of the regression line and use this to estimate the Final exam score, given an Arithmetic score of 15.

4a. What is the normal curve?

b. Distinguish between Leptokurtic, Mesokurtic and Platykurtic curves.

c. Explain each of the following terms as fully as you can:

i. Robustness   (ii). Type 1 error   (iii). Purposive Sampling

iv. Systematic Sampling   v. Non parametric test

vi. Critical Value