OBAFEMI AWOLOWO UNIVERSITY, ILE-IFE
FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL FOUNDATIONS AND COUNSELLING

2009/2010 HARMATTAN SEMESTER EXAMINATION
M.Ed./M.A/Ph.D DEGREE EXAMINATION

CFC 605: STATISTICS IN EDUCATION

Instruction
Answer **ALL** Questions. Time Allowed: **3 Hours**

1. Several students majoring in Psychology Architecture and Engineering obtained the following scores on a test of mechanical drawing:

Psychology:	5	3	4	'2	6		
Architecture:	7	5	7	6	8	4	3
Engineering:	S	9	7	9	6	7	

(a) Formulate a null hypothesis from the above

(b) Compute a measure of association between the test scores and major area of study.
Comment on your results

(c) Given that $\eta=3.16$ at $p<.05$, test the null hypothesis that η is significant. Interpret your results.

2. The following are arithmetic test scores and final exam scores for 12 students in an elementary statistics course:

Student number	Arithmetic Test (X)	Final Exam (Y)
I	33	65
2	36	51
3	39	53
4	29	42
5	41'	50
6	3S	53
7	42	64
8	35	54
9	23	50
10	37	45
11	28	63
12	25	50

From the above,

(a) Find b_0 and b_1 in the least squares prediction equation $\hat{Y}i = b_0X_i + b_0$

(b) Predict the final exam score of students no 13 whose arithmetic test score was 40

(c) Draw a graph to represent the above equation.

(d) Compare your estimate from the regression equation with that of the graph? How would you explain the difference, if any?

(e) Find the standard error of estimate. What does this value stand for?

3. A particular product sold in supermarkets is often purchased on impulse. Three different floor locations have been tried for this product over a 21 week period. Sales in units per week for each location are reproduced below:

Location I	Location 2	Location 3
31	26	2
35	13	12
33	27	23
36	18	21
42	24	17
44	34	25
18	40	30

Employ the Kruskal-Wallis test and a critical probability of 5% (α=.05) to test the null hypothesis that there is no significant difference in the distribution of sales that would be encountered at the three locations. Compare pour result with the F-statistic on the same data. Use T-Method test of multiple comparisons to determine which two locations had significant sales.

4(a) Explain the terms:

(i) Robustness (ii) degree of freedom (df) (iii) level of significance (iv) critical value (v) power of a test

(b) Distinguish between the following

(i) Type I and type II error

(ii) One-tailed and two-tailed tests

(iii) Meso-kurtic and platy-kurtic skewness

(iv) Parametric and non-parametric tests

(v) Dependent and independent variables