FACULTY OF EDUCATION AND SOCIAL SCIENCES

COURSE CODE: BCO 318

COURSE TITLE: MANAGERIAL STATISTICS

DATE: 15th August, 2014   **TIME: 9.00a.m. – 12 noon**

INSTRUCTIONS

- Answer question one and any other **THREE** questions in section

QUESTION ONE

a) The lines of regression of a bivariate population are
$$8x - 10y + 66 = 0$$
$$40x - 18y = 214$$
The variance of x is 9 Find

   i)   The mean value of x and y   (3 Marks)
   ii)   Correlation co-efficient between x and y   (3 Marks)
   iii)   Standard deviation of y   (3 Marks)

b) List and explain four types of random sampling techniques   (4 Marks)

c) State and explain the basic conditions that must be met in order for chi-square analysis to be applied   (5 Marks)

d) Ten students are chosen at random from a population and there scores in finance are found to be 63,66,67,68,69,70,70,71 and 71. Considering the data discuss the suggestion that mean score in financial Management Course in the population is 66   (7 Marks)

QUESTION TWO

Management statistics

For a certain joint company, the prices of preference shares (x) and debentures (y) are given below

X	73.2	85.8	78.9	75.8	77.2	81.2	83.8
y	97.8	99.2	98.8	98.3	98.3	96.7	97.1

Use the method of rank correlation to determine the relationship between preference prices and debentures prices   (15 Marks)

QUESTION THREE

Two independent samples of army and navy recruits are selected and the time in minutes it takes each recruit to complete an obstacle course is recorded as shown in the table. A $\alpha = 0.05$ is there any difference in the times it takes the recruits to complete the course?   (15 Marks)

Army	15	18	16	17	13	22	24	17	19	21	26	28
Navy	14	9	16	19	10	12	11	8	15	18	15	

QUESTION FOUR

Two sources of raw materials are under consideration by a company. Both sources seem to have similar characteristics but the company is not sure about there respective uniformity. A sample of 10 lots from source A yields a variance of 225 and a sample of 11 lots from sources B yield a variance of 200. Is it likely that the variance of source A is significantly greater than the variance of sources B at $\alpha = 0.01$ (15 Marks)

QUESTION FIVE

A survey of 320 families with 5 children each revealed the following distribution

No. of boys	5	4	3	2	1	0
No of girls	0	1	2	3	4	5
No of families	14	56	110	88	40	12

Is this result consistent with the hypothesis that male and female births are equally probable?

(15 Marks)