



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE

HFD 501/HSC 501: STATISTICS

DATE: Tuesday 27th March, 2012

TIME: 9.00 a.m. – 12.00 p.m.

Time: 2 hrs

Instructions:

Answer all the questions in section A and any two in section B

Section A 30 marks

Section B 30 marks

Total 60 marks

Section A: Answer all the questions (30 marks)

1. a. Giving an example in each case, differentiate between an estimator and an estimate as applied in statistics (4 Marks)
b. Briefly discuss the qualities of a good estimator (3 Marks)
2. When carrying any research, one is likely to encounter two types of errors. Using relevant example discuss the two main types of errors. (4 Marks)
3. A designer used 5.5 meters of fabric to make an outfit for client A where the client's mean fabric usage is 4.5 and the standard deviation 0.45. She also used 4 meters for client B where this client's mean usage is 5.5 and the standard deviation is one (0.25). Compare her fabric usage for the two clients using the z-score. (3 Marks)
4. Indicate what the following statistical models measure
 - a. Tukey Test
 - b. Scheffe' Test
 - c. Multiple Linear Regression analysis
 - d. Spearman Rank Order correlation
 - e. t-test(5 marks)
5. A study was conducted to determine the influence of computer training on performance in Fashion Illustration course. A sample of 50 Fashion design students was trained in Computer Aided Drawing and another sample of 50 was not trained. The same test was given to both groups. 45 of those who were trained and 25 of those who were not trained passed in the illustration. Calculate the incidence rate ratio and advice the department on the way forward with regard to training in computer skills. (5 Marks)
6. a. Giving an example in each case, differentiate between a null and an alternative hypothesis (2 Marks)
b. Briefly discuss the general procedure you would follow in hypotheses testing (4 Marks)

SECTION B: Answer only two (2) questions from this section (30 marks)

7. The following table gives the total sales (ksh) of Skirt suits for KilometerOne Fashion Designers (KFD) and the amount of money spent on Advertising in the years 2005 to 2010.

Year	2005	2006	2007	2008	2009	2010
Sales '000 ksh	106	159	124	175	160	122
Promotion '00 ksh	13	13	16	10	19	29

- State the null hypothesis.
 - Using the Direct method, calculate the Pearson's correlation coefficient.
 - Test the hypothesis at 0.05 confidence level
- (15 marks)
8. Assume that there are five departments at Manukute Textile mills with 200, 250, 230, 300 and 380 employees respectively. The human resource manager decides to conduct a spot check in the evening at 4.30 pm to find out how many employees in each department leave work before the stipulated time of 5pm. Those absent at the time of checking were 52, 30, 66, 39 and 25 respectively. Calculate the X^2 and test the hypothesis there was no significant difference between the departments in respect to leaving work early at 0.05 confidence level. Show your working.
- (15 Marks)
9. With aid of diagrams, explain the possible type of relationship likely to be found between variables in any study.
- (15 Marks)