



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2011/2012
SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
IN COMMUNITY RESOURCE MANAGEMENT
HCR 300: INTRODUCTION TO STATISTICS

DATE: Tuesday 29th March, 2012

TIME: 11.00 a.m. – 1.00 p.m.

INSTRUCTIONS: Answer Question ONE and any other TWO.

1. The following dataset provides data for salary for Morganite Limited: Study it and answer the questions below

SNO	Gender	College	Salary (USD)
1	FEMALE	4	289.00
2	FEMALE	4	280.00
3	MALE	1	275.00
4	MALE	7	303.00
5	MALE	1	180.00
6	FEMALE	7	317.00
7	MALE	3	260.00
8	MALE	7	250.00
9	FEMALE	1	200.00
10	MALE	1	180.00
11	MALE	4	230.00
12	MALE	4	276.00
13	MALE	7	327.00
14	FEMALE	1	215.00
15	MALE	1	250.00
16	FEMALE	4	180.00
17	MALE	7	384.00
18	FEMALE	1	265.00
19	FEMALE	1	265.00
20	FEMALE	1	310.00

- i) Calculate the variance for the salary of female employees and interpret the results 16mks
- ii) Calculate the mean salary for people from college 3 and 4 2mks
- iii) Calculate median salary for males from college 7 2mks
- iv) Which of the colleges' graduates earn the highest? 2mks
- iv) Calculate $\sum(x-1)^2$ of salary for college 1 2mks

- v) Calculate $\sum x^2 - 1$ of salary for females from college 1 2mks
2. a) Differentiate between Inferential and descriptive statistics 4mks
- b) Define the following terms as used in statistics
- i) Sample 2mks
 - ii) Population 2mks
 - iii) Standard Deviation 2mks
 - iv) Inter quartile range 2mks
 - v) Z-Score 2mks
 - vi) Skewness 2mks
- c) Oduor reads at an average (mean) rate of 20.6 pages per hour, with a standard deviation of 3.2. Calculate the percentage of the time will he read between 15 and 26.2 pages per hour 4mks
3. a) Describe the most common types of probability sampling 8mks
- b) Using data provided below draw a box and whiskers plot 8mks
65, 35, 30, 23, 34.9, 20, 22, 23, 26, 20, 21, 39, 11, 25, 17, 27.6, 24, 25, 24.2, 29.7, 24.6, 27, 21
- c) Calculate the interquartile range for the data below 6mks
2, 5, 48, 49, 55, 58, 59, 60, 62, 63, 63
4. a) Define the term Linear regression 2mks
- b) Using a well labeled diagram, describe a Gaussian distribution 10mks
- c) KM shoppers have a mean Ksh60 grocery bill with a standard deviation of Ksh40. Calculate the probability that a sample of 100 KM shoppers will have a mean grocery bill of over Ksh70 10mks

5. The dataset provided below show the weights of students at Kisauni secondary school, study it and answer the questions that follow

SNO	Gender	age	weight
1	f	19	85
2	f	16	55
3	f	16	48
4	m	19	76.4
5	m	18	63
6	f	15	53
7	f	16	56
8	f	17	73
9	f	15	55
10	f	15	59
11	f	16	56
12	m	16	54
13	m	18	61
14	m	19	61.5
15	m	19	62
16	m	19	62
17	f	19	88
18	f	19	65
19	f	19	61
20	m	18	68

- a) Using the t-test, differentiate between the weights of males and females 16mks
- b) Draw an histogram showing the distribution of the age of both males and females 6mks