



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2014/2015

DIGITAL SCHOOL OF VIRTUAL AND OPEN LEARNING

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF
MASTER OF SCIENCE

HCU 801: STATISTICS

DATE: Wednesday, 29th April 2015

TIME: 9.00 a.m. – 12.00 p.m.

INSTRUCTIONS:

Answer ALL questions.

1. The following dataset provides data from a certain population: Study and answer the questions below

Age	Gender	Waist Circ	Wt	Height	Systolic BP	Diastolic BP
41	F	98	69	167.5	99	70
28	M	76.5	64	154	107	60
30	F	88	64	165.5	134	90
30	M	103	83	169	104	76
31	M	91.5	72	155.5	110	80
33	M	106	85	160.5	111	67
35	F	96.5	69	173	116	69
36	F	86	51	165.5	134	80
40	F	81	55	157	141	105
46	F	95.5	90	168	125	73
48	M	109	90	176	126	90
50	F	115	96	142.5	145	117
52	M	94	69	165	111	63
57	F	94.5	66	169	125	84
57	M	100.5	80	156	115	69
59	F	122	85	164.5	118	73
60	F	100	60	158	135	88
61	M	126.5	115	166.6	116	95
62	M	108.5	84	175	121	85
65	M	104.5	77	167	129	76
70	M	98.5	70	176	130	74
75	M	112.5	95	163.5	125	93
78	M	95.5	80	154	111	79

i) Calculate	a) $\sum X$ for females waist circumference	1mk
	b) $\sum X^2$ for females waist circumference	1mk
	c) $(\sum X)^2$ for females waist circumference	1mk
	d) $\sum (X-1)$ for females waist circumference	1mk
	f) $\sum (X-1)^2$ for females waist circumference	2mks
	g) Variance for female waist circumference	2mks
ii) Calculate	a) $\sum X$ for males Height Aged >50yrs	1mk
	b) $\sum X^2$ for males Height Aged >50yrs	1mk
	c) $(\sum X)^2$ for males Height Aged >50yrs	2mks
	d) $\sum (X-1)$ for males Height Aged >50yrs	2mks
	e) $\sum X - 1$ for males Height Aged >50yrs	2mks
	f) $\sum (X-1)^2$ for males Height Aged >50yrs	2mks
	g) Variance for male Heights aged > 50 yrs	2mks
iii) Calculate	a) $\sum X$ for systolic BP females <50yrs	1mk
	b) $\sum X^2$ for systolic BP females <50yrs	1mk
	c) $(\sum X)^2$ for systolic BP females <50yrs	2mks
	d) $\sum (X-1)$ for systolic BP females <50yrs	2mks
	e) $\sum X - 1$ for systolic BP females <50yrs	2mks
	f) $\sum (X-1)^2$ for systolic BP females <50yrs	2mks
	g) Standard Deviation for Diastolic Pressure	2mks
2. a)	Differentiate between Inferential and descriptive statistics	3mks

b) Define the following terms as used in statistics

i) Range

2mks

ii) Variance

2mks

iii) Standard Deviation

2mks

iv) Relative variability

2mks

v) Z-Score

2mks

vi) Chebyshev's theorem

2mks

3. With Specific examples, define the following levels of measurements

a) Nominal

2mks

b) Ordinal

2mks

c) Interval

2mks

d) Ratio

2mks

4. Using the dataset provided in question 1 on the weight,

a) Construct a frequency table for males and females using 50 as the lowest and 5 as the group width

5mks

b) Compare the two tables and describe who weighs higher between the men and women

5mks

5. a) Describe Linear regression in statistics

2mks

b) The citizens of Rwanda work a mean of 251 days per year, with a standard deviation of 20 days. How many days correspond to a z-score of 2.3?

2mks