JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS

UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF BUSINESS ADMINISTRATION WITH IT

3RD YEAR 2ND SEMESTER 2016/2017 ACADEMIC YEAR

NAMBALE LEARNING CENTER

COURSE CODE: SCS 324

COURSE TITLE: STATISTICAL ANALYSIS WITH SPSS

EXAM VENUE:-- **STREAM: (BBA – FINANCE/HR)**

DATE:20/12/16 **EXAM SESSION: 9.00 – 11.00 AM**

TIME : 2.00 HOURS

Instructions:

1. **Answer Question one (Compulsory) and any TWO questions**
2. **Candidates are advised not to write on the question paper.**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room.**

QUESTION #1[30 MARKS]

a) Distinguish between qualitative and quantitative data [2 Marks]

b) Explain the following types of statistical analysis using an example [4 Marks]

i. Univariate analysis

ii. Bivariate analysis

c) Explain three measures of central tendency [6 Marks]

d) Briefly explain any five possible limitations of statistical approaches to data analysis in solving day to day problems [5 Marks]

e) State and explain using an example three categories of descriptive statistics that you would use to analyze your data [6 Marks]

f) **C**ross tabulation is a way of examining the relationship between two variables. State the procedure likely to be followed when you want to carry out cross tabulation with SPSS [3 Marks]

g) State any four sampling techniques [4 Marks]

QUESTION #2 [20 MARKS]

a) State and explain any FOUR levels of measurement [4 Marks]

b) Some students at JOOUST were asked to examine the relationship between the Gender of the student and the number of other colleges the student has visited before settling at JOOUST. The Data is as below:

ID	Gender 1=Female, 2=Male	Colleges visited before
11111	1	3
11112	2	4
11113	2	7
11114	1	5
11115	1	2
11116	2	1
11117	2	6
11118	1	4
11119	1	2

Explain the steps you are likely to follow in order to calculate correlation coefficient in SPSS. [8 Marks]

c) Forth year students embarked on a research study. However, after collecting data, they were advised that it will be better if they used skewedness or kurtosis in their final analysis. In your own view, distinguish between the implications skewedness and kurtosis. Use diagrams to illustrate their various types [8 Marks]

QUESTION #3 [20 MARKS]

A researcher is interested in determining the impact of the availability of Teachers (x1) and Books(x2) on student performance in Kenya Certificate of Secondary Education (KCSE)(y) To answer this question, he collects the data from a one stream school as shown in the table below.

School	Number of teachers (x_1)	Student: book ratio (x_2)	KCSE Results (y)
A	7	3	6.312
B	8	2	7.478
C	5	3	5.133
D	10	1	8.273
E	9	2	7.514
F	9	1	7.427
G	8	2	7.640
H	11	1	8.1467
I	7	2	6.209
J	4	4	4.813
K	8	2	6.932

(a) State the null hypothesis for this study [2 Marks]

(b) Using SPSS explain how you will be able to compute the mean and standard deviation of Number of teachers (x), Student: book ratio and KCSE Results(y) [5 Marks]

(c) Explain how you will use SPSS to compute Pearson's correlation coefficient r for

1. Enrolment and KCSE_Results. [4 Marks]
2. Enrolment and KCSE_Results [4 Marks]

(d) Explain how you will use SPSS to compute a linear regression analysis and produce the linear regression equation of x1 x2 (independent variables) and y (dependent variable) in the form:

$$y = a + bx_1 + cx_2$$

[5 Marks]

QUESTION #4 [20 MARKS]

JOOUST management wishes to increase its service delivery by staff. As such, they designed a sample questionnaire shown below

1. Department you are working (in the University)…….
2. Gender: ☐ Male ☐ Female
3. How many years have you been using computers?

   ☐ Less than 1 year
   ☐ 1-2 years
   ☐ 2-4 years
   ☐ 4-6 years
   ☐ More than 6 years

4. Did you receive any training in information and communication technology (ICT) over the past 3 years?

   ☐ Yes ☐ No

5. What are your main reasons for attending computer training?
   ☐ Financial
   ☐ Prestige
   ☐ Career enhancement
   ☐ Personal growth
   ☐ Training is required
   ☐ Others (please specify ……..

   a) Explain the process that they are likely to follow when performing coding of the various variables for the Questionnaire [8 Marks]
   b) State 4 examples of Bivariate analysis that they might encounter [4 Marks]

   c) The following is an annotated output of correlation statistics generated from the hsb2.sav data file. Using the data file, generate the correlation coefficients and confirm the outputs.

For each of the bivariate correlation coefficients discuss the following:

i. Strength of the correlation [4 Marks]
ii. Direction of the correlation [4 Marks]

Correlations

		reading score	writing score	math score	science score	female
reading score	Pearson Correlation[a]	1	.597**	.662**	.630**	-.053
	Sig. (2-tailed)[b]	.	.000	.000	.000	.455
	N[c]	200	200	200	200	200
writing score	Pearson Correlation	.597**	1	.617**	.570**	.256**
	Sig. (2-tailed)	.000	.	.000	.000	.000
	N	200	200	200	200	200
math score	Pearson Correlation	.662**	.617**	1	.631**	-.029
	Sig. (2-tailed)	.000	.000	.	.000	.680
	N	200	200	200	200	200
science score	Pearson Correlation	.630**	.570**	.631**	1	-.128
	Sig. (2-tailed)	.000	.000	.000	.	.071
	N	200	200	200	200	200
female	Pearson Correlation	-.053	.256**	-.029	-.128	1
	Sig. (2-tailed)	.455	.000	.680	.071	.
	N	200	200	200	200	200

**. Correlation is significant at the 0.01 level (2-tailed).

QUESTION #5 [20 MARKS]

Kisumu County wishes to create equity in salaries by its employees. They wish to perform a regression analysis of *current salary on beginning salary, education level and previous experience (in month)* for the datasheet shown below
Current salary= function (*beginning salary, education level and previous experience (in weeks)*)
Or
Current salary=$\beta_1 + \beta_2$**beginning salary*+ β_3**previous experience* + β_4**education level*

Gender	Education Level	Current Salary	Begin Salary	Prev Experience(in Weeks)
male	College	57000.00	27000.00	144.00
male	College	40200.00	18750.00	36.00
female	Secondary	21450.00	12000.00	381.00
female	Primary	21900.00	13200.00	190.00
male	College	45000.00	21000.00	138.00
male	College	32100.00	13500.00	67.00
male	College	36000.00	18750.00	114.00

The output of regression analysis is as follows

coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	**-5706.559**	6153.138		-.927	.422
	Level of education	**3244.410**	1952.633	.201	1.662	.195
	Beginning Salary	**1.960**	.258	.823	7.601	.005
	Previous Experience in Weeks	**-7.731**	11.943	-.069	-.647	.564

a. Dependent Variable: Current Salary

a) Explain how regression will be performed in SPSS [4 Marks]
b) Write the regression equation line for this model [4 Marks]
c) Rank the independent variables (level of education, beginning salary, previous experience) in terms of the variable that best predicts current salary [6 Marks]

d) Which of the independent variables are significantly related to current salary [6 Marks]