JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF EDUCATION

UNIVERSITY EXAMINATION FOR THE DEGREE OF MASTER OF EDUCATION

(EARLY CHILDHOOD)

2ND YEAR 1ST SEMESTER 2013/2014 ACADEMIC YEAR

MAIN SCHOOL BASED

COURSE CODE: EDU 804

COURSE TITLE: COMPUTER APPLICATIONS IN RESEARCH AND SPSS

EXAM VENUE: **STREAM: (SBPS)**

DATE: **EXAM SESSION:**

TIME: 3.00 HOURS

Instructions:

1. **Answer Question 1 (compulsory) and ANY other 2 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: (20MARKS)

The following are the filled questionnaires for a study from a sample of 12 students and their performance in **KCPE** examinations

Gender: boy **DOB**: 03/11/1994 **Age**: 15years **Stream**: yellow **Height:** 1.52meters **KCPE Marks: 352**	**Gender**: girl **DOB**: 12/09/1996 **Age**: 13years **Stream**: green **Height:** 1.48 meters **KCPE Marks: 3**22	**Gender**: boy **DOB**: 15/08/1993 **Age**: 116years **Stream**: blue **Height:** 1.46meters **KCPE Marks: 3**68	**Gender**: girl **DOB**: 18/09/1994 **Age**: 15years **Stream**: green **Height:** 1.50meters **KCPE Marks: 342**
Gender: boy **DOB**: 26/10/1994 **Age**: 15years **Stream**: blue **Height:** 1.43meters **KCPE Marks:** 357	**Gender**: boy **DOB**: 17/12/1996 **Age**: 13years **Stream**: blue **Height:** 1.45meters **KCPE Marks:** 311	**Gender**: girl **DOB**: 09/04/1996 **Age**: 13years **Stream**: yellow **Height:** 1.52meters **KCPE Marks: 3**45	**Gender**: boy **DOB**: 05/09/1994 **Age**: 15years **Stream**: green **Height:** 1.48meters **KCPE Marks:** 369
Gender: girl **DOB**: 27/06/1995 **Age**: 14years **Stream**: yellow **Height:** 1.45meters **KCPE Marks:** 325	**Gender**: boy **DOB**: 07/05/1996 **Age**: 13years **Stream**: green **Height:** 1.51meters **KCPE Marks: 376**	**Gender**: boy **DOB**: 23/01/1993 **Age**: 16years **Stream**: blue **Height:** 1.43meters **KCPE Marks:** 292	**Gender**: girl **DOB**: 08/11/1995 **Age**: 14years **Stream**: yellow **Height:** 1.48meters **KCPE Marks:** 344

a) How many **cases** and **variables** are given in the data? (2 marks)

b) Name measurement scale for each **variable**. . (2 marks)

c) Enter the data with appropriate variable, **names, type, labels, decimal values, scale** into the SPSS variable view and print both variable view and data view (6 marks)

d) Use SPSS to compute the at least 8 descriptive statistics of **Height** and **KCPE Marks** . (4 marks)

e) Give an output of a pie charts to show the distributions of the students by **gender** and **streams** qualification (4 marks)

f) Give an output of a histogram with a normal curve to show the distributions of **the students KCPE performance**. (2 marks)

QUESTION 2: (20MARKS)

The data in Question 1 should be used to answer the questions in this section:

Use:

a) appropriate t test to find out whether the mean difference in **boys' and girls' height**. . (5 marks)

b) **ANOVA and Tukey post hoc analysis** to find out whether the mean difference performance amongst **the 3 streams (yellow, green and blue).** (7 marks)

c) Pearson correlation to find out :

(i) whether the age of the student have **INFLUENCE** on their performance in KCPE**.** **.** (4 marks)

(ii) the **RELATIONSHIP** between age of the students and their the height (4 marks)

QUESTION 3: (20MARKS)

A researcher is interested in determining whether **Students' Gender (Boy or Girl)** is associated with **preference for subject choice (Geography or History)** and collected the following data from a sample of 15 teachers.

Table 1: Teachers and Teaching Subject

No	Students' Gender	subject choice
1.	Boy	Geography
2.	Girl	History
3.	Girl	Geography
4.	Boy	Geography
5.	Girl	History
6.	Boy	History
7.	Girl	Geography
8.	Girl	History
9.	Boy	Geography
10.	Boy	Geography
11.	Girl	History
12.	Girl	History
13.	Boy	Geography
14.	Girl	History
15.	Girl	History

i. Enter the data with appropriate variable **names, type, labels, decimal, values and scale** into the SPSS variable view then print both variable view and data view (5 marks)

ii. Analyze sample data using SPSS to:

a. Give output of a pie charts to show the distributions of the students by **students' Gender** and **subject choice** (4 marks)

b. Analyze sample data using Pearson's Chi-square test (Chi-square test of association) (χ^2) to find out whether there is association between **students' Gender (Boy or Girl)** and **subject choice (Geography or History)** (4 marks)

c. Produce an output of display of clustered bar charts for **Teachers' Gender (Boy or Girl)** and **teaching Subject** (2 marks)

QUESTION 4: (20MARKS)

a) A teacher is interested in determining the relationship between student performance in English composition and English grammar .To answer this question, he collects the data from 12 students' results as shown in the table below.

Table 2: Student Performance in English Composition and English Grammar

English composition Marks (x)	23	25	24	26	28	24	28	25	20	25
English grammar marks (y)	24	27	26	27	29	24	26	24	22	28

i. Enter the data into the SPSS data editor and print (4 marks)

ii. Use SPSS to ::

a) Compute the mean and standard deviation of **English composition Marks (x)** and **English grammar marks (y)** (2 marks)

b) Find Pearson's Product-Moment Correlation coefficient (r) and describe the nature of relationship between **English composition Marks (x)** and **English grammar marks (y)** (2 marks)

c) Obtain a scatter diagram of the data **English composition Marks (x)** scores and **English grammar marks (y)** (2 marks)

d) Perform a simple regression analysis and determine the Least Squares Regression Line equation of Y on X (3 marks)

e) Estimate the **English grammar marks (y) scores** of a student whose **English composition Marks (x)** are known to be 21. (2 marks)

QUESTION 5: (20MARKS)

In a study to find out how the transfer of the physics teacher affected student performance in Physics.

Their performance in Physics before and after the teacher's transfer was recorded as shown below.

Table 3: Student performance in Physics

Student	Performance in Physics before teacher transfer (x1)	Performance in Physics after teacher transfer(x2)
1	81	75
2	89	86
3	75	71
4	85	80
5	83	85
6	80	74
7	98	93
8	84	81
9	79	77
10	88	90
11	85	84
12	74	72

i. Enter the data with appropriate variable **names, type, labels, decimal values and scale** into the SPSS variable view and print both variable view and data view (6 marks)

ii. Use SPSS to Rank the variables Performance in **Physics before teacher transfer (x_1)** and Performance in **Physics after teacher transfer(x_2)** and name the new variables (4marks)

iii. Compute the mean and standard deviation of **Performance in Physics before teacher transfer (x_1)** and **Performance in Physics after teacher transfer(x_2)** (2 marks)

iv. Give an outputs of histograms with a normal curve to show the distributions of student **Performance in Physics before teacher transfer (x_1)** and **Performance in Physics after teacher transfer(x_2).** (4 marks)

v. Use an appropriate statistical test to find out whether the mean difference in **Performance in Physics before teacher transfer (x_1)** and **Performance in Physics after teacher transfer(x_2)** is statistically significant days (4 marks)