JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF EDUCATION

UNIVERSITY EXAMINATION FOR THE DEGREE OF MASTER OF EDUCATION (SNE)

1ST YEAR 1ST SEMESTER 2018/2019 ACADEMIC YEAR

REGULAR PROGRAMME

MAIN CAMPUS

COURSE CODE: ESE 804/ECE 811/EDU 804

COURSE TITLE: COMPUTER APPLICATION IN RESEARCH

EXAM VENUE: **STREAM: M. ED. (CURRICULUM STUDIES)**

DATE: 20/08/19   **EXAM SESSION: 9.00 – 12.00NOON**

TIME: 3.00 HOURS

INSTRUCTIONS

1. **Answer any THREE 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 ONE

(a) What is the importance of obtaining descriptive statistics in an SPSS data file?

(3 mks)

(b) Identify the assumptions which are common to all techniques used to explore relationships among variables? (5 mks)

(c) Describe the procedure for requesting Pearson's r from SPSS. (6 mks)

(d) Describe the procedure for finding and correcting errors in data using SPSS.

(6 mks)

QUESTION TWO

A researcher collected data from four schools in two counties concerning the perception of the students about some aspects of their school. The schools were St. Luke, St. Mark, St. John and St. Paul and the counties were Kisumu and Migori. The questionnaire for data collection is shown below:-

Students' questionnaire

1. County   …………
2. School …………
3. Gender   …………
4. Age   …………
5. Indicate your level of agreement with the statements after the key below

	KEY	
1	=	Strongly disagree
2	=	Disagree
3	=	Undecided
4	=	Agree
5	=	Strongly Agree

(a)	My school is the best in sports			1	2	3	4	5
(b)	Our head teacher is hard working			1	2	3	4	5
(c)	Our deputy is hard working	1	2	3	4	5		
(d)	We have the best diet	1	2	3	4	5		
(e)	We are a disciplined school	1	2	3	4	5		

Use the above questionnaire to answer the questions that follow:-
(i) Prepare a code book for the data collected. (9 mks)
(ii) Examine the questionnaire and identify the data items that will give you:
- o Continuous data (2 mks)
- o Discrete data (2 mks)
- o Ordinal data (2 mks)
(iii) Identify the rules for naming variables. (5 mks)

QUESTION THREE

(a) Distinguish between
- (i)   Data editor window and viewer window.   (2 mks)
- (ii)   Correlation and causation.   (2 mks)

- (iii)   Code book and data file   (2 mks)

(b) Identifythe types of variables in SPSS data structure for the following variable names.
- (i)   Height   (1 mk)
- (ii)   County   (1 mk)
- (iii)   Percentage marks   (1 mk)
- (iv)   School category   (1 mk)

c. Distinguish between parametric and non-parametric tests and give examples in each case. (10 marks)

QUESTION FOUR

(a) Identify the conditions for conducting a one-way between groups ANOVA using an SPSS programme?   (4 mks)

(b) A researcher was interested in finding out whether there was a significant difference between thepercentage marks across three groups of students. While analyzing the data by conducting an ANOVA test using SPSS, the researcher obtained the output shown in the tables below. Use the output tables to answer the following questions.

Output from a one-way between groups ANOVA

Oneway

Descriptives

Percentage Marks

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum
1 18-29	147	21.36	4.551	375	20.62	22.10	7	30
2 30-44	153	22.10	4.147	335	21.44	22.77	10	30
3 45+	135	22.96	4.485	386	22.19	23.72	8	30
Total	435	22.12	4.429	212	21.70	22.53	7	30

Test of Homogeneity of variance
Percentage Marks

Levene Statistic	df1	df2	Sig.
746	2	432	.475

ANOVA
Percentage Marks

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	179.089	2	89.535	4.641	.010
Within Groups	833.951	432	19.292		
Total	8513.021	434			

Robust Tests Of Equality Of Means
Percentage marks

	Statistic	df1	df2	Sig.
Welch	4.380	2	284.508	.013
Brown-Forsythe	4.623	2	423.601	.010

Multiple Comparisons
Dependent Variable: Percentage Marks
Tukey HSD

(I)Age.3 groups	(J)age 3 groups	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
1 18-29	2 30-44	-.744	.507	.308	-1.94	.45
	3 45+	-1.595*	.524	.007	-2.83	-.36
2 30-44	1 18-29	-.744	.507	.308	-.45	1.94
	3 45+	-.851	.519	.230	-2.07	.37
3 45+	1 18-29	1.595*	.524	.007	.36	2.83
	2 30-44	.851	.519	.230	-.37	2.07

* The mean difference is significant at the 0.05 level

(i) What was the total number of individuals that were studied?   (1 mk)

(ii)   With a reason state whether the assumption of homogeneity of variances was violated or not.

(2 mks)

(iii)   With a reason, state whether there is a significant difference   in the percentage marks betweenthe groups.

(3 mks)

c. Describe the procedure for conducting a one-way between groups ANOVA with post-hoc tests.

(10 marks)

QUESTION FIVE

A researcher conducted a research to explore sex differences in self-esteem scores and obtained the output as shown in the tables below. Analyze the data output tables and use them to answer the questions that follow:

The output generated from this procedure is shown below

Group Statistics

SEX		N	Mean	Std. Deviation	Std. Error Mean
Total self esteem	MALES	484	34.02	4.91	36
	FEMALES	352	33.17	5.71	36

Independent samples t-test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
										95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total self esteem	Equal variances assumed	3.505	.062	1.622	434	.105	85	52	18	1.87
	Equal variances not assumed			1.661	422.349	.098	85	51	18	1.85

(a) How many males and females participated in the study?
    (i) Males   (2 mk)
    (ii) Females   (2 mk)
(b) What is the function of Levene's test for equality of variances.?   (2 mks)
(c) What was the P value for the t-test?   (2 mks)
(d) State whether there was a significant difference between the means for males and females and why you think so?   (4 mks)
(e) Examine the function of the following types of graphs
    i.   Histogram   (2 mks)
    ii.   Bar graph   (2 mks)
    iii.   Box plot   (2 mks)
    iv.   Line graph   (2mks)