



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS  
2022/2023 ACADEMIC YEAR  
FIRST SEMESTER EXAMINATIONS  
FOR SAVET**

**COURSE CODE:** ICT 801

**COURSE TITLE:** INTRODUCTION TO COMPUTER APPLICATION

**DATE:** 19/12/2022

**TIME:** 2:00P.M-5:00P.M

---

INSTRUCTIONS TO CANDIDATES

1. Answer Question 1 (Compulsory) and ANY other 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 ONE 20 MARKS (COMPULSORY)**

- a. A sample of randomly selected students at MMUST was asked to indicate the category that best described how often they accessed campus Wi-Fi. The following was filed:

Wi-Fi usage Pattern	Count
Never	30
Rarely	15
Occasionally	50
Often	110
Daily	120

- i. Explain the possible data types for the two fields **4 Marks**  
ii. Outline the steps for the construction of a pie chart for the above in SPSS **8 Marks**
- b. During statistical analysis, a researcher gets the following results (outputs) for various tests:  $r = -0.05$ ,  $r = 0.7$ ,  $r = -0.85$  and in another test, get  $p = 0.001$ ,  $p = 0.65$  and  $p = 0.048$ . Identify the type of test the researcher did and interpret each of the results. **4 Marks**
- c. Explain Univariate statistical analysis using example **4 Marks**

**QUESTION TWO 20 MARKS**

- a. Two groups of 5 patients have the following ages: Group A: 18, 24, 30, 36, 42, Group B: 18, 19, 20, 38, 55. Both groups have the same mean, 30. The standard deviations are 8.5 for Group A and 14.5 for Group B. Statistically, explain your understanding of the results. **6 Marks**
- b. Given the following research question, "Do the standardized math test scores differ between students that passed the exam and students that failed the final exam?" the researcher, seeks to analyze the collected data using a one way ANOVA. **10 Marks**
- i. Identify the independent and dependent variables  
ii. Enumerate the two basic processes/steps you would undertake before doing the one way ANOVA
- c. Explain how you would analyze your data using the one way ANOVA in SPSS. **4 Marks**

**QUESTION THREE 20 MARKS**

- a. After a survey study, a researcher purposes to use each of the following techniques to analyze different aspects of the data. Briefly explain each technique, the type of data on which they are applicable and the type of hypothesis. **12 Marks**
- i. One sample t-test  
ii. Mann-Whitney test  
iii. Two-sample t-test

- iv. Spearman's correlation coefficient
- b. After data collection, a researcher seeks to analyze the data. Enumerate and explain, stating the importance of each of the three basic processes he has to undertake before performing the analysis.

**8 Marks**

**QUESTION FOUR 20 MARKS**

- a. A researcher does a survey study using questionnaires to collect quantitative data. He however does not understand statistical analysis process. Briefly explain clearly how you would guide or help this researcher analyze his data by choosing the right statistical techniques using SPSS.

**10 Marks**

- b. Data analysis is usually a cumulative activity that is preceded and succeeded by a series of other activities, which require good understanding of research techniques.

- i. Define data analysis.

**2 Marks**

- ii. Briefly discuss any TWO activities that precedes and TWO activities that succeed data analysis.

**8 Marks**

**QUESTION FIVE 20 MARKS**

- a. Identify the key fields of application of Chi Square Test and briefly explain each **5 Marks**

- b. The Output of the Chi Square Test of Independence are shown below. Give your interpretation of each of the output table given. **15 Marks**

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender Gender * Exam Exam	107	100.0%	0	.0%	107	100.0%

			Exam Exam		Total
			.00 Fail	1.00 Pass	
Gender Gender	0 Male	Count	22	10	32
		Expected Count	19.1	12.9	32.0
	1 Female	Count	42	33	75
		Expected Count	44.9	30.1	75.0
Total		Count	64	43	107
		Expected Count	64.0	43.0	107.0

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.517 <sup>a</sup>	1	.218		
Continuity Correction <sup>b</sup>	1.033	1	.309		
Likelihood Ratio	1.546	1	.214		
Fisher's Exact Test				.283	.155
Linear-by-Linear Association	1.503	1	.220		
N of Valid Cases	107				