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

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

**FOURTH YEAR SECOND SEMESTER REGULAR EXAMINATIONS FOR THE
DEGREE OF BACHELOR OF SCIENCE IN APPLIED STATISTICS WITH
INFORMATION TECHNOLOGY, BACHELOR OF MATHEMATICS WITH
INFORMATION TECHNOLOGY & BACHELOR OF SCIENCE IN MATHEMATICS
WITH ECONOMICS**

COURSE CODE: STA 452

COURSE TITLE: CATEGORICAL DATA ANALYSIS

DATE: 28TH APRIL, 2022

TIME: 12 P.M – 2 P.M

INSTRUCTIONS:

INSTRUCTIONS TO CANDIDATES

This paper consists of FIVE Questions.
Answer question 1(compulsory) and any other TWO questions .

Time: 2 hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 4 Printed Pages. Please Turn Over

- c. Compute the 95% confidence interval for the odds ratio. (6 marks)
- d. Determine the Chi-square statistic, test the hypothesis and interpret your results. Compare your result with your result in (b) above. (11 marks)

QUESTION THREE (20 MKS)

- a. In a broad general sense, psychiatric patients can be classified as psychotics or neurotics. A psychiatric white studying the symptoms of a random sample of 40 from each of these populations found that where else 16 patients in the neurotic group has suicidal feelings, only 8 in the psychiatric group suffered in this way. Test if there is an association between the two psychiatric groups in the presence or absence of suicidal feelings. The data was as shown below. (10 marks)

	Type of patient	
	psychotics	Neurotics
Suicidal feelings	8	16
No suicidal feelings	32	24

- b. The table below shows data collected during an investigation into attempted suicides and show suicidal intent and a depression rating score for a sample of 91 cases. Compute Kendal's tau statistic and interpret your results. (10 marks)

	Depression Rating (X)				
	Suicidal intent (Y)	Did not want to lie	10	14	8
Unsure		2	4	7	2
Wanted to lie		5	9	11	17