

**CHUKA**

**UNIVERSITY**



**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF MASTER OF ARTS IN  
CRIMINOLOGY AND SECURITY STUDIES**

**SOCI 803: SOCIAL STATISTICS**

**STREAMS: M.A. CRSS**

**TIME: 3 HOURS**

**DAY/DATE: TUESDAY 09/04/2024**

**11.30 A.M. – 2.30 P.M.**

**INSTRUCTIONS**

- **Do not write on the question paper**
- **Answer question one and any other two**

**Question one**

a. Represent the following information on appropriate figure [8 marks]

| Religion  | Catholic | Muslim | Hindu | Protestant |
|-----------|----------|--------|-------|------------|
| Frequency | 54       | 25     | 15    | 68         |

b. Citing relevant examples discuss the four levels of measurement [12 marks]

d. Explain five steps involved in hypothesis testing [10 marks]

**Question two**

a. Distinguish between the following terms as used in statistics

- i. Population and representative sample [2 marks]
- ii. Parameter and statistic [2 marks]
- iii. Quantitative and qualitative data [2 marks]

b. Test the hypothesis that there is no difference between place of residence and gender at the level of significance of 0.05 among the college students using data in the table below

[9 marks]

|         | Male | Female |
|---------|------|--------|
| Chuka   | 26   | 44     |
| Ndagani | 48   | 68     |
| Mitheru | 69   | 35     |

**Question three**

a) Explain two applications of correlation analysis [6 marks]

b) The following data was used to predict the sales based on advertising costs. Determine the sales at advertising costs of 18. [9 marks]

|             |     |     |     |     |     |     |
|-------------|-----|-----|-----|-----|-----|-----|
| Advertising | 23  | 35  | 46  | 55  | 63  | 84  |
| Sales       | 394 | 457 | 561 | 692 | 781 | 952 |

**Question four**

a) A researcher wanted to determine the difference in the means of experimental and control groups. Analyze the data extracted from this research as indicated in the table below and interpret the results. [9 marks]

|              |    |    |    |    |    |    |
|--------------|----|----|----|----|----|----|
| Experimental | 33 | 51 | 45 | 27 | 14 | 59 |
| Control      | 54 | 76 | 60 | 45 | 26 | 90 |

b) Determine the standard deviation for the data below [6 marks]

|           |       |       |       |       |       |       |
|-----------|-------|-------|-------|-------|-------|-------|
| Scores    | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 | 61-70 |
| Frequency | 5     | 24    | 36    | 52    | 46    | 7     |

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