



ZIMBABWE OPEN UNIVERSITY

FACULTY OF APPLIED SOCIAL SCIENCES

DEPARTMENT OF COUNSELLING

MASTER OF SCIENCE IN COUNSELLING

MSCC502: ADVANCED RESEARCH METHODS AND STATISTICS

November 2014

Time: 3 Hours

INSTRUCTIONS

Answer **question one (40 marks)** and **any other two** questions. Each question carries 30 marks.

Additional Materials

1. Scientific calculators are allowed in the examination
2. Candidates must be provided with Statistical Tables and Formulae.

Credit will be awarded for good presentation.

Questions

Section A: Compulsory

1. Critically analyse the use of ethnographic designs in social science research. [40]

Section B: Answer any TWO questions

2. Identify ethnic considerations you would apply to your research study and explain how you would go about securing them. [30]
3. (a) A marriage counsellor keeps records of the reasons given by husband and wife for marriage difficulty. She notes that the stated reasons may not be true reasons. She classifies each couple into two factors; husband's reason and wife's reason. The following results were obtained:

Wife's Reasons	Husband's Reason			
	Money	Children	No love anymore	Any Other
Money	86	31	132	19
Children	17	64	43	13
No love anymore	54	39	132	33
Any Other	30	17	37	54

Test the hypothesis at 0.05 level of significance that husband's and wife's reasons are independent. [20]

- (b) Give four assumptions made when performing a chi-square test. [10]

4. Examine qualitative research designs. Illustrate your answer with relevant examples. [30]

LIST OF FORMULAE

1. Arithmetic Mean Ungrouped data

$$\bar{x} = \frac{\sum x_i}{n}$$

2. Arithmetic mean Grouped data

$$\bar{x} = \frac{\sum f_i x_i}{n}$$

3. Mode Grouped Data

$$M_0 = O_{mo} + \frac{c (f_m - f_{m-1})}{2f_m - f_{m-1} - f_{m+1}}$$

4. Median Grouped Data

$$M_e = O_{me} + \frac{c \left[\frac{n}{2} - f(<) \right]}{f_m}$$

5. Range for Ungrouped data = $x_{\max} - x_{\min}$

6. Range for Grouped data

Upper limit (highest class) – Lower Limit (lowest class)

7. Pearson's Correlation Coefficient

$$r = \frac{n \sum xy - (\sum x) (\sum y)}{\sqrt{[n \sum x^2 - (\sum x)^2] \times [n \sum y^2 - (\sum y)^2]}}$$

8. Spearman's rank correlation coefficient

$$R = 1 - \frac{6 \sum d^2}{n(n^2 - 1)}$$

9. Variance $S_x^2 = \frac{\sum f(x - \bar{x})^2}{(n - 1)}$

10. Standard deviation $S_x = \sqrt{S_x^2}$

11. Standard deviation $SD = \sqrt{\frac{\sum x^2 - \frac{(\sum x)^2}{n}}{N}}$

12. Z-score = $\frac{x - \bar{x}}{sd}$

13. Pearson's measure of skewness = $\frac{3(\text{mean} - \text{median})}{\text{Standard deviation}}$

OR

14. Pearson's measure of skewness = $\frac{\text{mean} - \text{mode}}{\text{Standard deviation}}$